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THE MARYLAND FARMER:

DEVOTED TO

Agriculture, Horticulture, Rural Economy & Mechanic Arts.

Vol. 7. BALTIMORE, DECEMBER, 1870. No. 12.

OUR NEW VOLUME.

This number brings to a close the seventh volume of the MARYLAND FARMER. With feelings of very sincere gratification we have received during the year, now almost past, many encouraging marks of approval from its friends and patrons. We may say, truthfully, that we have spared no labor nor care to make it acceptable to our subscribers, and a valuable and valued assistant in their labors. Our aim has been to keep them well informed in respect to all those points in which they are interested, and especially to keep pace with the advance of agricultural knowledge, whilst not neglecting the true worth of those old and well tested facts which experience teaches us must underlie, as a solid foundation, all the operations of agriculture. We are confident, from the many cordial assurances of which we have been the recipients, that our endeavours have been appreciated by our readers, and that the MARYLAND FARMER has from month to month been hailed as a welcome visitor in the rural homes, not only of our good old State of Maryland, but in many others beyond its borders.

Our thanks are due, and are very warmly rendered, to the many friends whose aid and encouragement have greeted our efforts, and thus strengthened our hands for the work we had undertaken to do. The next volume of the MARYLAND FARMER will commence on the 1st of January next, and we now ask of our friends in anticipation of its issue, to assist us in increasing its circulation. We have never yet appealed to them that they did not cordially respond, and now that the old troubles arising out of the disorganization of our labor system, though still felt in some measure, are nevertheless gradually adjusting our agriculture to the new order of things, we are anxious to make for the MARYLAND FARMER a more extended sphere of usefulness. To accomplish this, by increasing its circulation, we respectfully solicit the individual assistance of those who wish well to us and to the journal we have faithfully endeavoured to conduct in such a

manner as would best promote the prosperity of the farming community. It is this consciousness of having used our best endeavours in this regard, and also the hope of improving hereafter upon what we have already done, that embolden us to tax in this manner the kindness of all who do us the honor to like the MARYLAND FARMER. We know that by a little personal exertion they can easily double our circulation; we know that a word from them, in our behalf, to their friends and neighbours, would be worth more to us than anything we could say for ourselves, and we now ask them frankly to oblige us by saying to their friends that we shall be glad to have them as subscribers, and will try to do all that lies within our power to merit their patronage.

EXTEND OUR CIRCULATION.

We call upon our friends throughout the State and country, to aid us in the extension of our circulation in their respective neighborhood, and ask that a prompt renewal of their subscriptions will be made.

AGENTS WANTED.

Agents wanted in every county and town in the United States to secure subscriptions to THE MARYLAND FARMER for 1871, to whom a liberal discount will be made. Many persons can act as Agents without interference with their ordinary business.

WILL OUR FRIENDS oblige us by presenting the claims of the MARYLAND FARMER to their neighbors? Thousands of farmers and residents of the suburbs of cities and villages, who are not now taking any journal devoted to agriculture and rural affairs, could be easily induced to subscribe, if the character of the paper was made known to them.—A very little effort in almost any neighborhood, we believe, would secure a good list, or at any rate, an additional subscriber.

ARREARS.—Those of our subscribers in arrears will particularly oblige us by an early remittance.

Our Agricultural Calendar.

Farm Work for December.

As the winters in this latitude do not ordinarily set in with any great severity until January, and there are seasons in which, in the more southern counties of Maryland, ploughing may yet be done on stiff clay lands. We do not advise, however, that any soil shall be broken up after the frost has entered it to a depth of more than an inch and a half or two inches. Indeed, to get a proper winter fallow it is much better to plough stiff soils as soon as the seeding of winter grain is over. One rule must, however, be at all times observed, and that is, never to plough a clay soil when it is wet, for it is certain then to break up in clods, and lie dead and inert throughout the winter. Wherever there is a doubt about the prudence of ploughing, do not plough at all, but leave the operation until the spring opens. There is plenty of things to do besides this, even in winter, on a well conducted farm. There is the stock to feed, perhaps to shelter more comfortably. There is wood to be gotten out, both for fuel and fencing. There may be corn to husk, and there ought also to be some leisure for social enjoyment—for reading and for studying out the best plans for the next year's crops. But this thing should be remembered. The profits of farming largely depend upon the adoption of a well digested system of tillage and the economical application of means to ends. The work for the month is as follows:

Winter Plowing.

Of this we have treated already in our preface.

Collecting Materials for Compost.

There is nothing of vegetable or animal origin that does not enter fairly and advantageously into the compost heap, and the more varied the materials are the more useful their application as manure will be to the fields that are to be improved. A good rule in the formation of compost heaps, is to make them in the proportion of one load of barn-yard manure to two loads of turf leaves, woods earth, and all sort of rough fibrous material. The heap should be built up layer by layer, commencing with the barn-yard manure, a foot thick, lessening the alternate layers of manure gradually as the heap increases in thickness, and moistening the entire heap after it has been completed with the black water of the barn-yard, by making deep holes through the top of the heap with a crow bar; when fermentation sets in watch it carefully, moisten with black water occasionally, if the season permits, so as to prevent fire fanging, and when the fermen-

tation has expended its force—it should not be allowed to go too far—then break down the heap and mix it thoroughly, and for every ten loads of barn yard manure, you will have thirty loads of rich compost, quite as valuable as the manure itself and in many cases containing a greater variety of those substances that enter into the composition of grasses and cereals, and promote not only their vigor of growth, but their productiveness in hay, in straw, and especially in grain.

Firewood.

Where wood is used for fuel, it would have been better to have cut it in the woods and hauled it to the shed to season as early as the latter part of October. The most commendable process is to have a year's supply ahead, leaving the wood of the fall cutting to season through the ensuing months. In any case, if the supply is short, see that the wood is cut and hauled in at once.

Shedding for Stock.

Comfortable shedding for stock, is equivalent to double feeding. In other words, stock well protected by shedding and nicely bedded, will go through the winter in better trim and come out in the spring healthier and more vigorous on one-half the amount of food required by stock exposed to the inclemencies of the weather—moreover, kindness to the dumb animal under our care, is a Christian virtue.

Fattening Hogs.

Hogs penned early in the fall, that is to say after the mast is pretty well exhausted, and while the temperature is still moderate, will fatten much more quickly than hogs taken in hand later in the season. When they are once penned, three things are essential. They should be comfortably housed, with clean, well bedded and well protected sleeping apartments; they should be regularly and not too profusely fed, and they should have access to charcoal, rotten wood and salt and wood ashes, to neutralize the acidity that springs from gross feeding. Shelled corn is better for them than corn on the cob and less wasteful, and messes of rich slops should also be given them frequently; and in the absence of slops, see they are furnished with pure water. Remember further, that the hog is the best of scavengers—that his manure is rich in nitrogen, and that if the pen is freely supplied with rough materials, a large supply of the very best manure will be the result.

Young Cattle.

Young cattle thrive best when they have a yard to themselves. This however is not always possible, but in any event they should be well cared for. It is not necessary—indeed it is not desirable that they should be crammed with food; but it is of the first importance that they should be regularly and

moderately fed, that they should be comfortably lodged, and that they should occasionally be allowed air and exercise, and regular and easy access to good water. Besides hay, or fodder, a little grain once a day will be found very beneficial.

Sheep.

These patient animals should also have sheds under which they may shelter themselves in inclement weather. The floors should be well bedded and the bedding renewed at least once a month. The daily supply of hay should be at least three pounds, or its equivalent in other provender. See also that a supply of rock salt is furnished them under cover at some point in the yard to which they can have ready access.

Harvesting Corn.

If the corn is not yet harvested go to work and gather and husk and store it away as soon as possible, or the crows will harvest it for you; and snow or sleet may spoil the fodder.

Fencing.

A provident farmer will always have a good supply of fencing on hand, and this is the season for getting it out. Do not let it remain long in the woods, but haul it to the barn, or the outhouse adjacent, so as to be ready for conversion into posts and rails whenever the opportunity serves.

Gates.

We dare say every farmer knows that although bars may be used as a temporary convenience, more time is lost in one season, in taking them down and putting them up again than a good gate would cost. There is really no difficulty in making excellent gates by the farm hands themselves, without even hinges or nails, but the use of the latter is decidedly to be preferred, and they are sufficiently cheap to obviate any serious difficulty on the score of poverty.

Draining.

Wet lands may be drained to advantage during this month. If the ground is filled with a network of lateral roots they can be separated along the line of the proposed ditch by the use of an old axe, and if they are bound together by a couple of inches of frozen soil, so much the better, for they can then be cut with great facility.

PLANTS thrive better in double flower-pots than in single ones; that is, if the pot containing the plant is placed inside a larger one with earth between the two. The outer pot prevents the sun from striking with too great force on the inner one, and thus keeps the plant moist, and secures for its roots a more even temperature. Flower-pots containing plants may be kept in boxes, the interstices between the pots being filled with sawdust. This arrangement is valuable in the heat of summer, for the box shades the pots from the rays of the sun and saw-dust retains moisture around the plants.

Garden Work for December.

All the open air operations in the garden are now virtually closed, but where frames are in use the following suggestions may be found of service.

Cauliflowers and Cabbage Plants.—In mild days uncover the frames and insert a wedge under the sashes to admit air to the growing plants. Early in the afternoon let down the sashes and cover up closely. If the soil of the frame becomes too dry, moisten it with lukewarm water.

Lettuce.—A cold frame well protected will answer very well for lettuce, but where the plants are to be forwarded very early, a slight warmth will be required. In the latter frames lettuce may still be seeded, and all lettuce plants that have been seeded in warm borders and are in a growing condition should now have the protection of a temporary frame covered with straw mats or with corn stalks, or husk may be placed lightly over the bed itself, not sufficient in thickness to choke the plants, but yet enough of it to shelter them.

Small Salading.—Small salading may be seeded in frames during the month. The frames should have air in moderate and sunny weather by slightly lifting the sashes. Cover carefully every evening, before the sun goes down.

PLANTING TREES IN AUTUMN.—Any time after the tree is done growing for the season, is the best to transplant in the autumn. The moment it can be seen from the leaves that the season's growth is over, the transplantation of trees should be attended to. By so doing the roots will have time to become established before severe weather sets in, and be ready to make an early, healthy start when spring opens. Some of our leading horticulturists assert that the roots of trees grow all winter, except when the ground becomes deeply frozen; but whether this be so or not, transplanting as early in the autumn as circumstances will admit of, doubtless has its advantages. And especially is this the case with large trees, which can be moved with more safety early in autumn than at any period of the year.

COMPOSITION FOR WALKS.—The following is highly recommended as a composition for walks: Sand, 5 parts; coal 2 parts. Mix cold, and add coal tar hot or cold, until the mass becomes just sticky with it. Make the foundation of the walk by ramming down or rolling hard 6 inches of gravel; then put three inches of the mixture on and roll or pound very hard.

To correct an evil which already exists is well; to foresee and prevent it is better.

AGRICULTURAL CHEMISTRY.—IV.

VEGETABLE & EARTH MOLDS, COMPOSTS AND NITER-BEDS.

BY J. S. H. BARTLETT, M. D.

If plants, like animals, had the power of locomotion, it may be supposed that they would remain in no location which was not supplied with the necessary materials required for their food and essential to their growth; and many an improvident farmer would find that the seed he had sown without due preparation of the soil, when germinated, would take its flight to quarters more suitable to its further development.

Plants being always fixed to a limited portion of the soil, depend upon the small space they occupy for the supply of their wants, and it is necessary that they should find immediately around them all that is requisite for their growth and the exercise of their functions. Chemistry, in its application to agriculture, is designed to point out to the cultivator of the soil the various means to be employed in supplying these wants, and render his calling one of reliability, instead of one of doubt and uncertainty. Of the various earths which serve to make up a fertile soil, that condition of things called "mold" is of the first importance. The decomposition which all dead plants undergo, facilitated by the influence of air and heat, form products which afford some of the principal elements of living plants. During the decomposition of vegetable matter, carbonic acid, as has been before stated, is given out, a part existing in combination with the constituents of the matter itself, and a part produced by the action of the oxygen of the atmosphere upon the carbon of the vegetable matter; hydrogen furnished by the decomposition of the watery particles is likewise exhaled, as also ammonia when nitrogen is present.—When vegetable matter, of whatever kind, is thus thoroughly decomposed, there results an earthy residuum of a brown color, known as mold, which, being mixed with the surface soil already ameliorated by the action of the atmosphere, forms a considerable portion of what is called the top-soil of all arable land; and in proportion to the depth of it is the land capable of being rendered more or less productive. The analysis of mold, by being washed in water, leads to a better knowledge of its component parts, and of its action on vegetation. M. de Saussure found that pure mold formed in an open field, leached twelve times with boiling water, yielded a dry extract equal to one-eleventh of its weight; rich garden soil, and the light, soft earth from a field which bore a good crop, yielded the same extract, but less in quantity.

The above learned philosopher was of opinion that the excellence of mold was not in proportion to the

extractive matter (affording colored infusions) it contained, because, when after repeated washings no more of this matter remained, it was only necessary to moisten the mold and expose it to the air for three months, to obtain a fresh supply. The value of this material is to be attributed to new combinations which are continually taking place, formed by the successive changes of vegetable products, wherein some substances insoluble in water may form excellent manures during the various stages of their decomposition. In an experiment with turf-mold, 100 parts of the dry extract furnished 14 parts of ashes, which, when leached with boiling water, afforded 25 per cent. of salts composed of pure potash, muriates and various sulphates.

Mold may be distinguished as earth-mold and vegetable-mold, both partaking of the characteristics of each other; the former affords a preponderance of fine earth, rich in vegetable matter, the latter a preponderance of vegetable matter, as decayed plants and leaves, with some earth, and is sometimes called "humus." Von Thaer, a Prussian authority on agricultural matters, says of it, "beside the four essential elements of its composition—carbon, oxygen, hydrogen and nitrogen—it also contains other substances, phosphoric and sulphuric acids combined with a base, and also earths and salts. Humus is the source of some living matter and affords food to organization. Without it, nothing material can have life. The greater the number of living creatures, the more humus is formed; and the more humus, the greater supply of nourishment and life."

The real utility of this substance, irrespective of the mineral matters it contains, arises from the following effects:

1st. It is constantly decaying, and thus producing carbonic acid and water, which feed the plant and water the soil. 2nd. During decay it constantly absorbs nitrogen from the air, which becomes converted into ammonia and nitric acid, and is thus fitted to sustain vegetation. 3d. It not only imparts valuable mechanical qualities to the soil by increasing its warmth, porosity and friability, but the carbonic acid produced, as well as the nitric acid, by acting on the insoluble mineral matters of soil, as the silicates of lime, potash, soda, and earthy phosphates, renders them soluble and capable of being taken up by the roots of growing plants.—The plants most benefitted by this body are potatoes, the roots, corn, cotton, tobacco, cabbage and wheat, which, being developed by culture, require a supply of food by the roots as well as leaves.—Grasses and clover increase instead of exhausting the soil of humus, hence their utility in rotations. The vegetable mold of the soil can be increased by plowing in green crops, straw, prepared peat, or

leaf mold, but is hastened in its decay, and consequently exhausted by the application of lime and ashes, as well as of working the soil, in consequence of the increased quantity of air thereby being admitted. Land will produce better under a condition of things analogous to that constituting mold, which condition is furnished by manures.

A few suggestions as to the readiest way of obtaining a supply of manure may serve as a practical application of what has gone before. The plan of making composts affords the means of obtaining the greatest amount of fertilizing materials on the farm, and in this way a large portion of matter can be utilized which would otherwise go to waste, or lie dormant in the place of its accumulation. These composts are more economically made up in the fields to which they are to be applied, and it is astonishing what a quantity of material can be got together, under a persistent and systematic method of collecting it. On a farm of any size, and affording the raw materials, it would be a good plan to furnish a stout lad with a yoke of steers, whose business it would be the year round to cart swamp muck, headlands, leaf mold and woods earth, to compost with the manure from the stables and cattle yard, and thus secure that valuable article from the waste it sustains by drenching rains, and the volatilization of its gaseous properties by the hot sun.

These composts are further improved by a proper addition of Peruvian guano, ground bones, or reliable super-phosphate of lime.

Another method of obtaining fertilizing matter is by making niter-beds for the production of nitrate of lime, which can be used as a top-dressing for the land, or to increase the activity of the compost heap. These beds are readily made by mixing animal and vegetable rubbish with air-slacked lime in loose heaps of any desired length, and six feet wide by three high. These should be arranged under a shed to protect them from the sun and rain, and kept moist with ditch water and animal or putrescent fluids. The heaps should be built upon ground that will not absorb fluid, and occasionally spaded over, and in from four to twelve months, according to the heat and abundance of animal matter, they will be rich enough to be used as a top-dressing, or put into compost with other fertilizers.

A succession of these beds can be formed in which all kinds of offensive garbage, night soil, and every kind of animal texture will be consumed with profit to the farmer by creating one of the most active manures, and which can be used with special benefit for tobacco. Muck, peat, fine mold, river or pond mud may be used with the niter-bed when a basis is wanted. The making these beds will require more care and attention than that of ordinary

composts, but when once properly undertaken and conducted under the master he will find that his "manufactory" of nitrates will afford him as much interest as any other branch of his agricultural pursuits.—*Journal of Applied Chemistry.*

Log Dams.

These, in a locality where timber is plenty, are cheapest, and easiest to build. If the bottom be rock or other good foundation, begin by laying a log across the stream, at the down-stream face of the intended dam; this you will extend from bank to bank, by laying one log at the end of another, having each piece as long and large as possible, taking care to clear away everything that will wash out from under, and where hollow places occur, put short logs across under, so as to give it a safe foundation. Then put short logs across this, six or eight feet apart, their butt ends lying upon the ground, up stream from this; you will now place another tier upon these, above and parallel with the first one but inclining slightly up stream; then another set of short ones, their butts upon the last tier, and top end upon the ground beside the first cross ties. These must be a little shorter than first ties, to admit of laying a smallish on the the ends of the first ones, and up into the angle formed by the second ones; you can now lay "skids" upon these small logs, and proceed to roll up your third tier of large logs, along the faces.—Care must be taken to notch them a little where they cross each other, to insure their lying safely, or block them secure with a stone or piece of wood where the small ends come.

Your next tier of ties must be notched well down at the smaller or up-stream end, and you must proportion your two parallel tiers of logs and these ties, so that the front or breast places, is good to chink these cracks, as it grows and increases in such a place, instead of washing out. Cedar bark, pounded soft like oakum, is also good. Such a covering requires but little graveling to make it tight, as the pressure of the water forces the packing down into the seams formed by the round logs, where it is not easy to wash it out, or displace it by any other means.

Such a dam is cheap, strong, and durable, where there is a constant supply of water; but on small streams liable to dry up in summer, and allow the logs to dry, and heat, and cheek, they very soon rot, and are therefore not to be recommended for such a situation.—*Practical Millwright and Miller.*

The First Premium for the best TIN-LINED LEAD PIPE was awarded by the late American Institute Fair to the COLWELLS, SHAW & WILLARD Manfg. Co., No. 213 Centre St., New-York.

LIME AND ITS APPLICATION TO LAND.

Lime is ordinarily found in the form of common limestone, or carbonate of lime, a combination of lime with carbonic acid. Every 100 pounds of pure limestone contains about 44 pounds of carbonic acid gas. This may be driven off by a high heat, as in the lime kilns. The lime then remains in what is called the caustic state, or quicklime. It will burn the tongue, if applied to it. When water is poured upon it (this may be shown by teachers,) it swells, cracks, heats, and finally crumbles to a fine powder. If the water is only used in sufficient quantity to slack the lime, it will all disappear, being entirely absorbed; it has in fact united with the lime, and become a part of the solid stone. The heat during slacking is caused by the chemical union of water and lime. A ton of limestone unites with about one-fourth of a ton of water.

If quicklime or slaked lime is exposed to the air, it gradually absorbs carbonic acid; and if left a long time, becomes nearly all carbonate once more. If a piece of quicklime be left exposed in this way until it has crumbled, it will effervesce again with muriatic acid, as the limestone did before it was burned, thus proving the fact just stated.

Lime is applied to the land in the three states above mentioned—quicklime hydrate or slaked lime, and air-slaked or mild lime, so called because it has lost its caustic properties. It is better for the land in all of these states than it was before burning has reduced it to an extremely fine powder, more fitted to be dissolved in the soil, and to be taken up by the plant. From the various tables already given, it is obvious that lime is an absolutely essential ingredient in the soil, being constantly needed by plants in all of their parts; but besides this, it performs other functions there of scarcely less importance, differing according to the state in which it is applied.

a. If the soil be stiff and cold, if it is newly drained, containing much of acid organic compounds, or if there are tough, obstinate grasses to eradicate, such as bent, etc., it is best to apply quicklime, or the caustic hydrate. In either of these conditions it has a most beneficial and energetic action; lightening and mellowing stiff clays, neutralizing and decomposing injurious acid substances, and extirpating many hurtful grasses and weeds.

b. If caustic lime is applied largely to light soils, it may do harm by too rapidly decomposing the organic matter, usually scarce in soils of this description. In all such cases, and generally when it is not wished to produce such effects as the above, mild or air-slaked lime is the best.

The action of all varieties is invariably more marked and permanent upon drained or thorough-

ly dry land, than upon that which is wet and swampy. All of these various states of lime act not only upon the organic matter in the soil, but upon the inorganic also, decomposing certain insoluble compounds, and bringing them into a state favorable to the sustenance of the plants. Thus we see that this manure performs many most important functions.

It has a constant tendency to sink in the soil, and in one that has been heavily limed for many years, quite a layer of it exists in the subsoil; this may be brought up by deep ploughing, or is made available by drains, which permit the roots to go down.—When applied as a top-dressing, it should in almost every case be mild, and also when used in composts, where much animal manure is present. The reason why precaution should be used in the latter instance, is one that has been alluded to before, in speaking of manure containing nitrogen. In all such cases, caustic lime causes a formation of ammonia from the nitrogen, and a consequent escape of it into the air. Where much lime is mixed with the manure, its depreciation in value is very rapid, owing to its loss. Where there is little or no nitrogen present, and it is desired to decompose peat, or to rot heaps of weeds and turf, the caustic lime is to be preferred, as its action is so much more energetic.

It is now considered the best practice to apply lime in rather small quantities, and often, as then it is kept near the surface, and always active.—Where it is bought, lime should always, if possible, be in the state of quicklime, as in that case there will be neither water nor carbonic acid to transport. In 100 pounds of carbonate of lime or common limestone, are 44 pounds of water; in 100 pounds of slaked lime, about 25 pounds of water, so that the saving in both instances by carrying quicklime is considerable.—*Norton's Elements of Agriculture.*

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DESTROYING STUMPS.—A little excavation is made under the stump, between two of the large roots, some combustible material put in, and then set on fire. Previous to this, however, some dry materials should be piled around the root, above the surface of the ground, and covered over with a compact layer of turf, forming a sort of coal pit. It has been found upon experiment, that the stumps will burn in this way a number of days, with a sort of subterranean fire; and when the turf falls in, nearly all of the roots is found consumed below and above the surface of the ground.

The hole left by the consumed stump will be found to contain a quantity of ashes, charred wood, burnt earth, &c.—all valuable fertilizers—a part of which may be thrown out for use elsewhere, and the crater or hole then filled up to the level with fresh turf or earth.—*South Land.*

APPLICATION OF MANURE TO THE SOIL.

We copy from "*Morton's Cyclopædia of Agriculture*," one of the best works ever published on the various subjects connected with farming:

"*The quicker farm-yard manure is buried the better.* This is a maxim that holds good everywhere, and under every circumstance; because, when once covered up by three or four inches of earth, it is safe from all risk of being lost, as the soil, according to Mr. Way's experiments, has both a physical power of retaining ammonia, while at the same time it yields up readily to the growing plants."

"*The wasteful practice of spreading manure on the surface of the soil, and allowing it to lie bleaching for weeks, and even months, before being ploughed in, is still carried on in some counties of England, and stoutly defended by hosts of clay-land farmers. If the perpetrators of such an enormity be right, science is at fault, analysis is an illusion, and ammonia and all its kindred a family of impostors.* The practice in Syria of making the dung of animals into cakes, and sticking them upon the walls of their houses, to dry in the sun preparatory to their ultimate destination of being burnt as fuel, is not much more wasteful than spreading out farm yard manure to the winds, rains and sun for months together. A farmer who imports his ammonia from the Chincha Islands, and dissipates to the four winds of heaven that furnished by his own farm, is nearly as wasteful as he would be were he to give away his straw for nothing, and to purchase from others what he required for his own use."

SPREADING MANURE.

"This operation is either performed broadcast or in drills. The former method is generally adapted in manuring for corn [grain] crops, or in winter manuring for spring green crops; and the latter mode is almost universal in the cultivation of root crops of all kinds. When to be spread broadcast, the manure is laid down broadcast in parallel heaps every five and a half or six yards each heap, when spread, occupying a space equal to the square of these numbers; and as these numbers are respectively the square root of an English square perch and a Scotch rood, the number of heaps to an acre, will in both cases be 160; and this sum, divided by any number of cart-loads, will give the number of heaps to be drawn from each cart. Thus if it be wished to lay on manure at the rate of 16 cart-loads per acre, the number of heaps will be 160 divided by 16=10 heaps per cart-load. If each cart-load contains 15 cwt. of manure, then each heap will be 15 cwt., which multiplied by 160=12 tons per acre."

"Broadcast manure should be spread and broken down as evenly as possible, and to effect this, three people should work at two rows of heaps; that is, two throwing out the manure equally over the surface, and the third breaking the lumps and covering all blank spaces. *The dung should be ploughed in as quickly as possible, and if long and rank, a boy or woman should go behind each plough to draw it into the open furrow.* The expense will not exceed 8d. per acre, and is well repaid by the more perfect covering of the manure, besides rendering it less liable to be dragged out by the harrows, if a corn crop is to follow."

"The most convenient mode of applying manure in drills, is to make each cart-load proceed along every three drills, and to pull it out without stop-

ping the horse. If, however, a large dose of manure is given, or if it be short, it is better to stop the horse every five or six yards, and lay it down in small heaps; as no man, however active, can draw a great quantity of short manure evenly out when the horse goes on without stopping."

"This plan of laying down the manure in the drills does not answer well on hilly ground, because whether the cart goes up or down, the raised portions of the drills are sure to be broken down or destroyed. The best plan, therefore, in such cases, is to mark off the field into small parallel divisions every five yards with a single plough furrow, lay down the manure as if in broadcasting, and then to have it carred and placed in the drills as fast as they are made."

Sir John Sinclair says that mixing manures with the soil is the best system to be adopted in all cases where it is necessary to enrich a field.

The whole course of Sir Humphrey Davy's article upon manure and manuring, enforce the propriety of burying organic manure as speedily after its removal to the field as possible, to prevent loss from evaporation.

Judge Buel, in a very able essay on manures, written long ago, holds this doctrine:

"Stable and fold-yard dung is most profitably applied in an unfermented, or partially fermented state, and to hoed and autumn ripening crops."

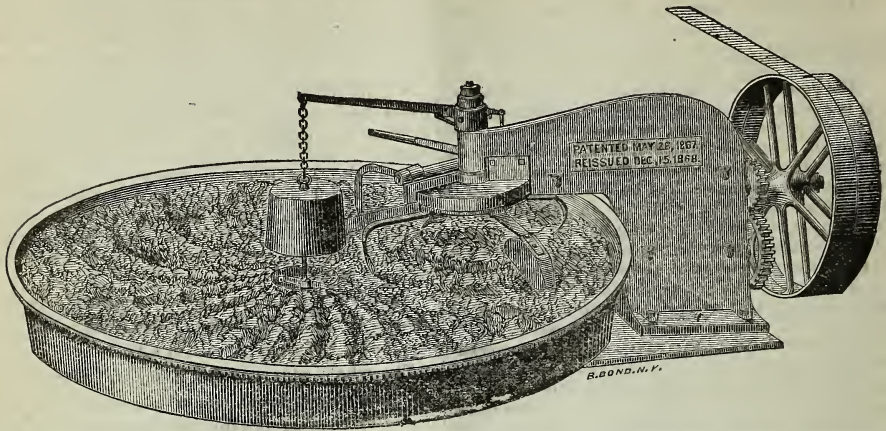
"Fermentation diminishes the fertilizing properties of manure. *If this fermentation takes place in the soil, the gases, the volatile portions which first escapes from the putrifying mass, are retained in the mould, and serve to feed the crop.* If fermentation takes place in the yard, *or upon the surface, the gases are wasted, and the dung undergoes further loss from the rains which ordinarily leach it.* Long manure should be spread broadcast, and well buried by the plough."

HEN MANURE, ASHES, PLASTER, AND SALT.

A valuable fertilizer, and one in reach of every farmer, especially adapted to garden culture as well as for top-dressing and field culture, is hen manure, ashes, plaster, and salt mixed in equal quantities, excepting the salt, of which one-fourth will be sufficient. Mix intimately, and apply either in hill at the surface, or broadcast. It gives good results upon all soils, and crops. I keep usually about twenty-five hens; these roost at a certain place the year round. Beneath the roosts is a light plank floor. The annual produce of droppings is six barrels of the pure thing. This, mixed with the same of ashes and plaster, gives eighteen barrels; the salt brings it up to twenty barrels of choice fertilizing compost, equal to much of the superphosphate of commercial manure firms, and worth far more than the manure from two cows.—JOHN JONES, *Rural New Yorker*.

AN OLD BIRD.—The *Chestertown Transcript* says that "Col. Edward Wilkins has a Peacock on his Riverside Farm, known to be over 70 years of age."

IMPROVED MACHINE FOR MIXING CHEMICALS, FERTILIZERS, &c.



This invention consists in combining with a pan, tub or suitable holding vessel revolving horizontally around its support, a Rubbing or Mixing Apparatus, that turns about its support, and in the pan. And further consists in combining with the revolving pan or vessel, and the Rubbing or Mixing Apparatus, a guiding device, for causing the rotation of the pan and mixer to move the mixed or rubbed material to the central opening in the pan, whence it drops out and is carried away by any suitable conveyor.

The machine is endorsed by Prof. G. A. Liebig, G. W. Grafflin, Esq., Isaac Reynolds & Sons, Lorentz & Rittler, of Baltimore; D. C. Ebaugh and the South Carolina Phosphate Co., of S. C., and others.

It is manufactured by Poole & Hunt, Founders and Machinists, Baltimore.

MANURE HEAPS.

The following plan of keeping manure in heaps was that adopted by Mr. Lawrence, of Cirencester, and described by him in *Morton's Cyclopedia of Agriculture*:

"There being few steadings where the accommodation is sufficient to hold all the manure until wanted for application to the land, it is necessary and particularly convenient to cast it out to the more distant fields, and to make it up in large heaps. Wherever this is necessary, the cart should also be driven upon the heap before being emptied. By so doing manure is consolidated, air is excluded, and fermentation prevented. In finishing the heap, the ends should be raised nearly on a level with the centre, which is easily done by a little attention on the part of the carter. These portions unavoidably left low at both ends for the cart to get on and off the heap can be raised on a level with the rest by backing several cart-loads, tilting them up, and throwing up the manure with forks. After this the whole earth should be covered with earth from the sides, three or four inches thick, which should be well beaten down with the back of a spade. Road-scrappings, when they can be got conveniently, are even better than common soil, as they are in a very minute state of sub-division from the grinding and treading of cart-wheels and horses' feet, besides always containing considerable quantities of manure dropped on the roads. If these are sufficiently wet to beat into a plaster on the heap, so much the better, as the surface will thereby be more hermetically sealed, both within and without. In addition to all this, the whole surface may very profitably be sprinkled with sulphuric acid, so that any ammoniacal gas that may escape through the earth may

be at once arrested by this useful agricultural detective, whose affinity for fugitive alkalies is altogether insatiable. Dissolved bones, having a sufficiency of free acid, may also be employed for fixing ammonia, and if the manure be intended for turnips or mangold wurtzel, it is an excellent plan to mix a few hundred weight through the whole heap.

"The site chosen for these manure heaps should be as sheltered as possible, in order to prevent the surface from becoming too dry. An excavated site, built on three sides, with a wall four feet high, is decidedly the best mode of preserving manure in a field; and were every field on a farm which may not be adjacent, and therefore not easily manured from the homestead, furnished with a pit of this sort, there would be no risk of loss from evaporation or fermentation, provided the top and open side were covered with earth."

"Before leaving this subject, we may state that no weeds in which the seed have ripened and are still remaining in them, should ever be mixed with farm-yard manure, as these seeds are sure to vegetate when placed in the soil again. Couch grass may be so employed, but the stolons take a long time to become completely rotten.

"Potato stalks and farm-yard manure make an excellent mixture for raising turnips, and if possible they should either be taken while green to the straw-yard to be trodden down and mixed with the manure there, or mixed up with manure in the fields and covered with earth. Turnip tops, if not ploughed in green, should also be treated in the same way. On sharp dry land, where the quality of the grain is generally good, turnip tops make excellent manure for wheat and barley, and this is very generally the mode of using them on hard land farms, but on soft soils they produce a coarse and inferior sample."

ADDRESS OF THE HON. HORACE CAPRON, *Commissioner of Agriculture.*

Delivered before the Cotton States Exhibition, held in
Augusta, Geo., October, 1870.

On the third day of the Fair the Hon. Horace Capron, delivered an address the perusal of which will well repay our readers. The Commissioner, as chief aim, since he has so ably occupied the bead of this Bureau, has been to note everything calculated to promote the interest of those engaged in agricultural pursuits. He has uttered many things which will cause reflection, and give rise to those needed reforms which the present state of labor demands. His address is replete with advice looking to permanent good, and we are assured he will receive the thanks of all for the utterance of the comprehensive views embraced in the following address.

MR. PRESIDENT AND LADIES AND GENTLEMEN: It is with pleasure that I have accepted your invitation to be present and to co-operate with you in the development of your industry. In the exhibition of the Cotton States Association, as witnessed yesterday, I see an earnest of the spirit of progress which I hope may animate the practical efforts of that association and of the Congress her assembled. In the admirable address of Dr. Tutt, your president, I was delighted to see imbibed the principles which underlie true industrial progress, and I heartily commend the practical suggestions of the orator of the day, Mr. Compton, looking toward larger production and fewer acres.

I thank you for this opportunity of presenting, very briefly, a few suggestions concerning the immediate, pressing agricultural needs of the South. You will permit me to express my convictions plainly, in a spirit of utmost kindness and sympathy.—You know well, and have boasted long, the advantages and resources of the "Cotton States," the great variety and productive capacity of your soils—a delightful climate, so varied by elevation and configuration of surface as to be adapted alike to the fruits and fibers of the tropics and all the products of the temperate zones—a wealth of precious and useful metals sufficient to supply for generations the material for the artisans of the world—an amount of water power wonderful to contemplate, and the largest supply of timber and wood to be found within the United States. Yet you are constantly and rapidly reducing the fertility of those soils, and turning out farm after farm to swell the area of the hundred million acres of exhausted lands. You ignore the marvelous capabilities of your sunny climate, in neglecting the myriad forms of production to which elevation, latitude, situation, soils, and various natural peculiarities contribute so munificently. Your minerals are hidden in the bowels of the earth waiting to respond to the call of enterprise and the magic touch of labor; your water power in its silent majesty or resistless energy, goes "on forever" in its thousand lines of march to the sea, occasionally reminding you, as at Richmond or in the Shenandoah, of its mighty capabilities which you have so long permitted to run to waste.

Your forests are solitudes, unblest with the hum

of busy and enriching labor, while your very hoe-handles are often brought from distant States, and your finest timber is remorselessly girdled that your lands may be cleared by that slow woodman, grim decay.

You possess a tract of country fit for a mighty empire. It is actually a wilderness, almost a solitude. Its railroads, turnpikes, farm improvements, scientific husbandry, manufactories, model school-houses and churches are yet mainly in the future. All this work is before you. It is true the country is comparatively new and very wide, and the workers are few; but parts of it have been settled for two hundred years, and yet scrubby pine forests grow where the settlers grew their supply of corn and tobacco. Has improvement been commensurate with your resources and in proportion to the numbers of the population? and has population kept pace with other less favored portions of the country? or made such advances as might reasonably have been expected with these immense resources? The truth compels me to say *no*—your consciousness echoes the negative. Why is it? The reasons are many. Prominent among them are these:

1st. A wasteful and slovenly system of agriculture the curse of our whole country, has been practiced in the Cotton States.

2nd. The extension of the raw products of agriculture by manufacture has been ignored or discouraged, culture has been restricted to a few crops, and the policy of buying nearly everything needed to eat, drink, or wear has been encouraged.

3d. Labor has been mainly restricted to a servile class, becoming a badge of dishonor rather than the crown of glory that it is; a large portion of the people have formerly lived in comparative idleness or unproductive employment; and the intellect and ambition of the influential or ruling class has been spent upon politics to the neglect of material development.

You have sometimes held commercial conventions while destitute of any commerce of your own; it is a significant sign of the times that you now, an exclusively agricultural people, assemble to consider the means of agricultural improvements and the general prosperity of your section.

As you have listened to my frank detail of obstacles to progress, permit me with equal brevity to note certain means of recuperation.

My first counsel would be—practice a restorative instead of an exhaustive system of agriculture. A system that involves abandonment of lands and removal to new scenes is unworthy of the age and a reproach to modern civilization.

No man is worthy to be a farmer who does not annually leave his land in better tilth and strength than he found it. The intellect must share more largely with muscle the toil of agriculture; machinery directed by skilled labor, and propelled by brute force, and also by the mighty power of steam, must take the place of expensive and inefficient human strength. This change, as I said in this State a year ago, "involves the necessity for smaller farms, better culture, liberal use of manure, rotation in crops, and a larger working capital in proportion to permanent investment. You are already spending millions annually on the old lands of the Atlantic States for commercial fertilizers. While I would commend a judicious expenditure in this direction, I would make this a basis of a practical rotation with a course of grasses and other restorative agencies of scientific agriculture.

The business of agriculture should be an industry and not a speculation. The insane pursuit of specialties has long been a curse to American agriculture. A whole community runs wild upon hops, when selling at fifty cents per pound, and in two years they are scarcely worth the price of picking, and extravagance begotten of high expectations is forthwith followed by bankruptcy. Wheat brings \$2 per bushel, and whole States become wheat fields, while every other interest languishes, until the bread crop becomes so abundant as to be fed to swine in preference to shipment for human food.—The sheep, with wool at \$1 per pound, holds high place in popular esteem, but is kicked from the pasture by every Randolph of the farm at the first indication of a heavy decline in the value of its fleece. In your section cotton, a great boon to your agriculture as a constituent in your aggregate of production, may become an unmitigated evil if left to usurp the place of all other crops. The crop last year produced \$100,000,000, more than one fifty per cent. larger ten years ago. Three millions of bales may command a profit of \$40 per bale, while 5,000,000 may not bring a dollar above their cost. But present profit is not the main consideration.—The increase in value and enlargement of the productive capacity of the soil, by a judicious rotation, including the restorative influences of green cropping and cattle feeding, is an increase of capital, a source of larger annual income, and an addition to the inheritance of one's children. It not only insures a profit from cotton culture, but enables the planter to pocket the entire proceeds of its sale, other products feeding man and beast. This leads me to another word of counsel, namely :

PRODUCE MORE AND BUY LESS.

As an individual grows rich by what he saves rather than by what he makes, so a community thrives by the extent of its sales. How often has the money received for a crop of cotton failed to discharge indebtedness incurred for all other supplies? How many plantations have been mortgaged to secure such debts? The day will come, if wise counsel is heeded, when the products of cotton will be *all surplus*, other products paying the expense of the farm. I have received, officially, abundant testimony from individual successes and failures, of the superior profits of mixed husbandry with cotton.—I am positive in the conviction that the permanent prosperity of these States depends upon a more diversified agriculture. While it is true that a large cotton crop may produce actually less money than a small one, no sane man will question the political economy which adds to this source of revenue many others, which, together, make an aggregate many times larger.

For some years to come the cotton manufactures of the world can not contribute to the industry of these States more than two or three hundred millions of dollars per annum ; while the total production with the variety required to realize the highest capabilities of soil and climate should command a thousand millions, and two thousand might be obtained within a period of ten years, if the whole population, with recruits from other States and from Europe, should unite all their efforts and their industry for the accomplishment of so grand an object. The combined value of all other products is even now materially larger than the value of cotton, but the proportion should be increased until it shall at least stand five to one. The cheapest beef and cheap-

est wool produced in the country are now the product of the grasses of the Gulf States.

The annual sales of animal products should soon be made to exceed greatly the value of the cotton crop. The wine industry of France produces three hundred millions of dollars annually, and supports a population of six millions. Then why should not your sunny slopes, best suited to wine production of any section of the continent east of the Rocky mountains, compete with the foreign vine-yards, at least in our own markets?

There is no reason why we should send abroad for a pound of sugar, though our home production was last year but ten per cent. of the consumption, when Louisiana alone has suitable lands of sufficient area to supply the present wants of the country.—Your fruits in wonderful variety, including those of the tropics, the products of which figure largely in our imports, should annually add millions of dollars to the wealth of the country. Scores of new and useful plants should be added to the list of those already in cultivation. I am yearly adding many, through the Department of Agriculture, among the most promising of which, the present season, are the corehorus (or jute) and the cinchona, which yields quinine. I shall continue these experiments of acclimatization, hoping to render you material aid in your efforts in diversifying your agricultural industry. In close connection with this idea of variety of production, permit me to present my third item of counsel.

MANUFACTURE YOUR OWN COTTON.

If England, by the magic of labor, can make a dollar's worth of your cotton produce two dollars, and if France, by still more delicate manipulation, can make it yield three, why should not your people, with willing hands to work, and abundant water and fuel for power, manufacture a large portion of your crops at least into yarns and coarse fabrics? and thus add to the annual value of your industries a hundred millions more. Thus you may save freight, storage, commissions, the profit of manufacture, and build up local markets to consume more of the edible products of your agriculture.

Here, in Augusta, you have furnished a notable illustration of the feasibility and profit of manufacturing, in an enterprise of magnificent proportions, two-thirds of the capital of which has come from its own net earnings. You have already other similar works, and should establish them in every direction, enlarging them from their own profits, until a large share of your cotton shall be manufactured within your own borders.

Manufacture is allied to agriculture, while commerce is an expensive non-productive go-between. There are few interests of agriculture which do not involve manufacture. In dairy farming, milk is sold with no aid of manufacture, except as it is "extended" by aid of the pump, but cheese and butter are the products of manufacture, which last year yielded the value of \$246,000,000. Flax and hemp can only reach the market through certain processes of manufacture; wheat must be threshed, corn shelled, hops carefully kiln dried; so with many other crops; indeed the farmer must necessarily be a manufacturer. High farming is always and only found in connection with manufacturing skill in extending the raw products of agriculture; and no purely agricultural nation can expect to attain wealth, a high state of civilization or great political power. These are facts which should be carefully pondered, and promptly acted upon.

Why is not the South to-day the great manufacturing section of the country? It is far better adapted to such an industry than any other section. The answer may be found in a paragraph from a former official statement emanating from the Department of Agriculture relating to this section:

"The path of progress has been equally open to all; laws supposed to favor a diversified industry have been applicable to all States alike; the best water power and cheapest coal are in States that make no extensive use of either; milder climates and superior facilities for cheap transportation have furnished advantages that have not been transmuted into net profits; and yet such communities, daily inflicting irreparable injury upon themselves by neglecting the gifts of God and spurning the labor of man are wont to deem themselves injured by the prosperity flowing from superior industry and a practical political economy."

As a closing suggestion—one in which the whole future prosperity of your States is involved in an eminent degree—permit me to implore you,

GIVE PROFITABLE LABOR TO ALL YOUR PEOPLE.

Depend not upon the coolies of China, or the people of Europe, until all your people, of whatever color, condition, or capacity, have full employment for mind and muscle in developing the wonderful capabilities under your control.

The practical question of the day is not where shall we procure more labor? but rather, how can we utilize and profitably employ the varied capacities, tastes, and inventive powers of every individual of our present population? What can each accomplish with the best results? What can be done for the employment of men practiced in no skillful employment? What for indigent women, and even children, dependent upon their own exertions for subsistence, for an education and advanced social positions? The State that furnishes employment for every son and daughter, labor suited to every capacity and taste, heavy toil for the unskilled and plodding, dextrous and delicate manipulation for the artistic, effort with soul in it for the intellectual, will become instinct with life, energy, progress, wealth, and contentment. Then labor will be cheerful, toil a pleasure, and its beneficent results enhanced beyond the highest expectation. Such results can never follow the practice of *a few rude industries*.

It is only a truism to say that the wealth of a country is the aggregate of its labor beyond its requirements for subsistence. Yet the truth of the saying is not sufficiently realized. The largest results in accumulation can, therefore, only be obtained by securing the best and most effective efforts of every individual. All must unite, then, and with heart and will, mind and muscle, contribute to the great end of enriching, beautifying, and blessing this glorious land.

I am satisfied that a new era is dawning, that the rule of one idea is weakening, and that the diversification of production has already commenced, opening a career of activity and a vista of beauty unwhimpered in the brightest days of this nation.

Roofs fed out to stock while they are confined on dry forage, afford the best change of diet they can have, and sheep, horses and neat stock should have a foddering of some kind—potatoes, turnips, beets, &c., two or three times a week.

To Destroy Weevils and other Grain Insects.

A writer gives the following method, which he has thoroughly tested by experience, and has the merit of being very cheap and convenient:

"It is simply to sweep and clean out the granary, and then wash it all over on the inside with strong pickle of common salt. This drives out all sorts of insects and worms, penetrates the timbers of the barn, and kills the worms which are so apt to get in them and cut them—and preserves the timbers in a wonderful manner. After this process is repeated for several times, the timbers of the barn become saturated with the salt, and will not decay for one hundred years. The pickle should be carried up and thrown upon the joist and sides of the barn, until the whole is thoroughly wet."

An old Maryland farmer, some years ago, wrote as follows:

"The weevil fly deposits its egg in the grain in its green and tender state. If the wheat is threshed soon after harvest, and thrown into bulk, it undergoes a heat which destroys the egg, and it sustains no injury; but if it remains long in the shock or stalk, the weevil hatches and makes its way out of the grain to its great injury, both in weight and quality. One degree to the north of us, this pernicious insect is but little known. Here I have sometimes marked its absence for several years; but, after a mild winter, they generally appear. In the more southern States, I believe they are never absent. The black weevil haunts our granaries where they are generated. Some years ago I suffered much injury from them, but have now an *effectual defence*. When my granaries are clear of grain, I place powdered brimstone in an earthen pan, which for safety I put on the floor in a bed of sand, closing doors and windows, and fire it—the smoke either destroys or drives them off."

An English paper suggests that Agricultural Associations try and discover some means of preserving the surface water on which the food of the country depends, instead of, as now, allowing it to run to waste. The writer urges that seasons of drought may be expected, and that on each farm there should be a reservoir to be used in stimulating growth in dry weather. The only way to provide against the damage that the drought inflicts upon our crops is to store the water that we allow to run to waste.—We use fertilizers to increase the harvests of our soil, and it is claimed that we should also bring the skies under our control for the same purpose. We admit that we here have a vast field for improvement in our system of agriculture, but is not the field a little too vast for ambitious man to grasp and turn to practical use?—*Turf, Field and Farm*.

HILLSIDE WASHING.

HOW TO TREAT A BARREN CLAY.

A correspondent refers to cases of this kind, where the "sand and loam" have washed away, leaving a bare clay. He advises carting back the sand and loam. This is a tedious and generally unremunerating process. The better way is to prepare a compost, made of four or more parts of loam in which sand prevails, and some long or raw manure. Apply this in the fall and plow under—plow sufficiently deep only to well cover the manure. In the spring sow peas; cover with plow, and when well up, sow plaster. Sow one bushel to the acre. When the pea haulm has attained its maturity, turn that down, bringing up more of the clay or soil below—that is, plow deeper; an inch or two will do. In the fall, or at the time of sowing winter grain, plow, cultivate well, and sow clover and timothy. If the stand of peas was a heavy one, and the soil looks rich and well, rye may be ventured on, though a sandy soil is the soil in general for this grain. Then in the spring sow the clover and grass seed. But the better way, in the main, is to omit the grain and sow the seed alone. The clover may do well; the timothy is sure to do so, to establish itself, and with proper treatment with fertilizers to make a fair meadow, but always to be cut early, before the stem has attained its full length, when quite lush and green yet; better if cut when the heads just begin to appear well. This on a clay soil, subject to the influence of the heat, and to show a burnt, naked surface, cracked and hard withal. In this case, however, more mellow at top, but hard and seamed below.

The timothy cut early, will still have a green, healthy root, and will push forward its shoots in a few weeks, forming a green sod, which is a protection to the roots.

If cut late, the sun, if there is a drouth, will burn out the roots; it will be the end of the grass. But cut green, the fall will see, if the drouth be not too severe, a fair, well-advanced crop, forming a coat both of protection and manure.

If the season is showery, a second cut can even be taken off, and still an aftergrowth form for protection.

The next year the same may be repeated, fertilizers being used, almost any answering; none, however, so well as barnyard manure, drawn fresh from the stables, and spread as drawn.

This treatment will make a totally barren spot remunerative, and it may be improved yearly. But cut two crops, the first early, the second green and early also.—*Cor. Country Gentleman.*

New volume of our FARMER begins January 1871.

COW'S URINE.

Upon the subject of the value of cow's urine Dana, who has more experience in the premises than almost any other analytical chemist, says:

"The quantity of liquid manure produced by a cow annually, is equal to fertilizing $1\frac{1}{2}$ acres of ground, producing effects as durable as the other evacuations. A cord of loam, [103 bushels,] saturated with urine, is equal to a cord of the best rotted dung, and the fresh urine of one cow is valued in Flanders at \$10 per annum. If the liquid and the solid evacuations including the litter, are kept separate, and the liquid is soaked up by loam, it has been found they will manure land, in proportion by bulk of 7 liquid to 6 solid, while their actual value is as 2 to 1.

"100 pounds of cattle urine afford about 8 pounds of the most powerful salts which have ever been used by farmers. The simple statement then, in figures, of difference in value of the solid and liquid evacuations of cattle, should impress upon all the importance of saving the last in preference to the first. Let both be saved. If the liquids contained naturally, geine, they might be applied alone. It is the want of that guiding principle which teaches that salts and geine [mould] should go hand in hand, which has sometimes led to results in the application of the liquid, which have given this substance a bad name."

TIN-LINED PIPE VERSUS LEAD PIPE.—I read with much interest the article in your last number on the purity of the Croton water at its fountain head; that it is not polluted by factories or sewerages but reaches our city uncontaminated with any unhealthy substance. But from the examination made by Prof. Chandler, I find this water after passing through leaden pipes for distribution through our dwellings is strongly impregnated with lead poison, the same result following several experiments.

The learned professor says the results should lead the citizens of our city to use precautionary measures for protection, and he recommends the use of tin-lined lead pipe. On this recommendation I called on the Colwells, Shaw & Willard Manufacturing Company, No. 213 Centre Street, to make an inspection of their tin-lined pipe and learn the price. I found there two immense hydraulic presses at work on this pipe; for, having lately increased the thickness and weight to that of the ordinary lead pipe, they have rapidly enlarged their business.—This visit induced me to follow Prof. Chandler's advice by giving an order to my architect to substitute tin-lined pipe for lead pipe, which we called for in the specification.—*Cor. Scientific American.*

Gambling is the child of avarice, but the father of misery.

TO MANAGE EVERGREEN HEDGES.

The ground being well prepared by digging or plowing, and working it into fine tilth, the plants, of arborvitæ or hemlock, not more than eighteen inches or two feet high, should be set two or two and a half feet apart. Norway spruce may be three feet high, and set three feet apart. Cut out the leading shoots, so as to make them bushy at the base. Mulch the ground with old straw or leaves, or spent tan bark, and the trees will take care of themselves for the first year. In spring of second year, prune off the strongest leading shoots on every side, but have the lower branches longer than the upper. This pruning should not be done until after severe frosts are past, say the middle of April. If grass or weeds have encroached upon the line of the hedge, clean them out, and keep the ground well worked through the summer, though without disturbing the roots. In the autumn, cover the soil around the plants with a light dressing of old manure. Every spring after this, prune the hedge into shape, keeping the base about four feet wide, and thence sloping up to the top, which should not be thicker than one foot, if of spruce, or six inches if of arborvitæ or hemlock.

After the hedge has nearly reached its desired height, its growth should be checked by summer pruning. In July or August cut back all the strong growth to the desired point. This summer pruning must now be kept up from year to year. As a further check to strong growth, let the grass grow around to the stems of the plants, and withhold all manure.

Let it always be borne in mind that the great secret in making a good hedge is to start it well with a strong, bushy base, and then to keep it in shape by pruning the upper branches shorter than the lower. If the lower branches are allowed to overhang at all by the upper, they are then deprived of all the sunlight, rain and dew. The reason why evergreens in the forest lose their lower branches, is because they are overshadowed. In the open meadow or pasture, the branches grow as low as the "browsing line;" and in the lawn, where cattle do not come, and where the axe is kept away, the branches spread themselves luxuriantly upon the grass. Lank, lean, bottomless hedges, always proclaim the neglect of their owners. Let the rules we have given be observed, and good, useful, handsome hedges of hemlock and other evergreens will become more common.

ON THE FAILURE OF SEEDS.

The want of knowledge as to *when* and *how* to plant seed is too often the cause of undeserved censure upon the seedsman. In nine cases out of ten, the cause of failure is not in the seed, but in the *time* or *manner* of planting.

When the farmer or gardener purchases his seeds he usually gets all he wants for the season. They are carried home and the interesting operation of sowing is begun. First in a hot-bed, if he has one, often as early as the middle of January, and in go, at the same date and under the same sash, his cabbage, cauliflower, lettuce, egg plant, pepper and tomato seeds. Yet, even in the waning heat of the early hot-bed, when the thermometer would possibly not indicate more than 50 degrees, he finds in a week or so his cabbage, lettuce and cauliflower "coming through" nicely, but as yet no egg-plants, peppers or tomatoes. He impatiently waits another week—makes an examination, and discovers that instead of his tomatoes and egg-plants beginning to vegetate, they are beginning to rot. It is now plain to him that he has been cheated; he has been sold old seed, and if he does nothing worse he forever after looks upon the seedsman he has patronized as unreliable and dishonest.

But he must have tomatoes, peppers and egg-plants and he buys again from another seedsman, warranted honest. He renews his hot-bed; it is now a month later, and a warmer sun, with milder nights, gives him the proper temperature in his hot-bed—70 or 80 degrees—and his eyes are at last gladdened by the sprouting of the troublesome seeds. A few warm days come in March, inviting him to begin to "make garden" outside. He still has the balance of his original lot of seeds, but as he is entirely befogged as to the cause of his failure in the hot-bed, he begins his open ground operations with little or no confidence in his seeds—but as he has them, they may as well be tried—and again he sows on the same days his peas and lima beans, radishes and pumpkins, onions and sweet corn. Hardy and tender go in together. The result must of necessity be the same as it was in the hot-bed; the hardy seeds only vegetate, and the tender rot, of course. This time he is not surprised, for he is already convinced that seedsman No. 1 is a rascal, and only wonders how any of his seed grew at all—so he again orders from seedsman No. 2 the varieties that have failed. Here circumstances continue to favour the latter, for by this time the season has advanced, the temperature increased, and the seeds duly vegetate. Every farmer knows that he may sow oats in March, but that if he plants his corn or pumpkins at the same time they will perish; but he may not know that what is true of farm crops is equally true of those of the garden.

THE TOBACCO CROP of Lancaster county, Pa., says the *Germanstown Telegraph*, it is stated, is the finest quality and largest in growth ever raised there, and will reach sixteen to seventeen thousand cases, and at \$60 per case, a low estimate, will be worth over one million dollars.

HARNESSES FOR HEAVY DRAFT.

Harness makers and harness users all over the country will do well to heed the suggestions of the *Harness Journal* on this subject. The sooner those unsightly abominations which cover a horse almost entirely with leather, in violation of all notions of economy and good taste, are laid aside, the better. The *Journal* says:

"Durability is the main consideration to be borne in mind in making up harness for heavy team work, but it is not necessary to load down the horses to secure this result. A harness may be made light but yet strong; not a single strap should be used more than is necessary to secure strength. It would be extremely difficult for any one to give a good reason for using the heavy cart harness; the heavy breeching and collar are of themselves all the load a horse should carry on a hot day. The shaft being attached to the collar relieves the back, but at the cost of immense strain upon the shoulders. Certain parts of the harness have to bear the greater proportion of the strain, while the other portions only serve as supports. The trace, hames and hame straps on all team harness bear the principal part of the strain, and the size should be proportioned to the work to be done.

"A trace made of oak-tanned ox-hide will, if tanned and finished in the best manner, safely resist a strain of 259 pounds to the square inch. A team trace, therefore, two inches wide and double thickness, can be relied on to sustain a strain of 1,000 pounds. Additional experiments have shown that when two thickness of this leather are pasted and stitched, with twelve stitches to the inch, its strength is increased about thirty per cent.; but taking the minimum strength, this sized trace on a team is capable of starting a load of two tons weight, which is all any team of horses should ever be called upon to draw. In connection with this, use a chain made of 3-16 wire, its actual strength is double that of the trace, but the wear necessitates the additional strength. The hame rings or draft eyes as well as the trace clip should be a little heavier, but there is no necessity of their being of $\frac{1}{2}$ inch round iron, as we often see them."

Preserve the Harness.

Our readers can rely upon the following preparation for applying to harness. We doubt if a better recipe for the purpose can be produced. We know of its being used largely and that it has given the best satisfaction:

Take of Castile soap 1 pound, beeswax 2 ounces, neatsfoot oil 1 pint, alcohol 1 gill, ivory black 1 ounce, gum arabic 1 ounce.

Mix the beeswax and oil by gently heating in the

same vessel; dissolve the gum arabic in a gill or so of hot water; shave the soap fine and dissolve same as the gum arabic; mix all together. If not of the consistency of oil, make it so by gently evaporating a portion of the water. Wash the harness clean and apply. If your harness is stiff and hard take the first opportunity to give it a thorough coating of this mixture, and when once pliable, keep it so.—The leather will last double the length of time that it will if never washed or oiled.

VARNISHES FOR HARNESSES.—The *Scientific American* gives the following: One-half pound india-rubber, one gallon of spirits of turpentine; dissolve by a little heat to make it into a jelly, then take equal quantities of hot linseed oil and above mixture, and incorporate them well on a slow fire.

Ice House.

Every farmer should have an ice house for keeping a supply of ice for use in the dairy in Summer. If ponds, creeks, etc., are not available, water may be taken from a well during severe frost and exposed for freezing. An ice house may be easily constructed in a side hill near the dairy or dwelling house. In making the excavation, perfect drainage must be obtained. It is better to construct the house partly or entirely above ground, if good drainage cannot be secured from an excavation. A house ten feet by ten, inclosed with double walls of plank with a space between them eight or ten inches wide, filled with saw-dust, will keep ice during the year, the roof being double and filled in like the walls. The larger the house is, the better will it preserve the ice. Water dropping from the ice must be removed by drainage; if it remains around the ice it will cause it to melt rapidly. The air in the space over the ice requires to be frequently changed, but drafts are injurious. If an ice house is not available, a supply of ice may be kept in a corner of the cellar if a heavy covering of saw-dust is put on and drainage provided.—*Western Rural*.

KEEPING ICE.—A correspondent in the *Boston Cultivator* says: "Ice keeps the best in large bodies, but if I were to build an ice house for 6 or 8 persons, I would build it 10 feet long, 8 feet wide, 5 feet high in the clear—put some loose boards on the ground—have the studding 10 inches—double boarded and fill with sawdust, no matter how close the ice comes to the boarding: have the roof shingled—with a ventilator therein to let off bad air, have a ditch all round the house, say 3 feet off; bank up all round the house, for a current of air underneath will waste almost as fast as you can put it in. After the ice is all in, cover the top with sawdust, 6 inches deep, and it will keep for years."

PREMIUM HAMS.

The following recipes for curing 1,000 pounds pork hams took the several premiums offered by the Maryland State Agricultural Society at its exhibition in 1858 :

First Premium.—Mix 2½ lbs. saltpetre, finely powdered, ½ bus. fine salt, 3 lbs. brown sugar, ½ gallon molasses. Rub the meat with the mixture; pack with skin down. Turn over once a week, and add a little salt. After being down 3 to 4 weeks, take out, wash, and hang up 2 or 3 weeks, until it is dry. Then smoke with hickory wood 3 or 4 weeks; then bag, or pack away in a cool place—not a cellar—in chaff or hay. Examine occasionally, and renew dry packing material.—*Thomas Love.*

Second Premium.—The meat after being cut out must be rubbed, piece by piece, with very finely powdered saltpetre, on the flesh side, and where the leg is cut off, a tablespoonful (not heaped) to each ham, a dessertspoonful to each shoulder, and about half that quantity to each middling and jowl; this must be rubbed in. Then salt it, by packing a thin coating of salt on the flesh side of each piece, say a half inch thick, pack the pieces on a scaffolding, or on a floor with strips of plank laid a few inches apart all over it, (that is, under the meat); the pieces must be placed skin side down, in the following order: 1st layer, hams; 2d, shoulders; 3d, jowls; 4th, middleings—take the spare-ribs out of the middleings. If the hogs are very fat, pare the fat carefully from the flesh side of the ham. The meat must not be frozen. It must lie in this wise: six weeks if the weather is mild, eight if very cold—the brine being allowed to run off freely. The smoking is an entirely different matter, and will require personal instructions to the persons entrusted with the smoke-making.—*J. Howard McHenry.*

Third Premium.—½ bushel of fine salt, 3 pounds brown sugar, 2½ pounds of saltpetre, ½ gallon best molasses. Mix these ingredients together, then rub each piece well with the mixture, until all be absorbed. The meat must be taken out of the pickle once a week for six weeks; the two first times the meat is taken out, there is to be a plate of alum salt added to the pickle which the meat makes.—*Mrs. Wm. H. Marriott, Jr.*

Fourth Premium.—2½ pounds saltpetre, dried and finely powdered, ½ bushel best Liverpool salt, 3 pounds brown sugar, and ½ gallon molasses. Mix all in a vessel, rub the meat well with same, and pack with skin down. It should be turned occasionally, adding at same time a little more salt.

The above is the exact amount required for 1,000 pounds pork. After being in salt 3 to 4 weeks, take out, wash clean the pieces, dry, and hang it up for smoking. Three weeks is sufficient to smoke

them thoroughly—by fire made of hickory wood. When smoked, take down and bag, or pack away in dry chaff or cut straw. Examine them occasionally, and if found to be at all damp, renew the packing with dry material.—*Charles Jessop.*

RECIPE FOR CURING BEEF AND HAMS.—A correspondent of the *Practical Farmer*, at Bridgeton, N. J., noted for having a superior quality of dried beef and hams, sends at their request, his recipe, which he has used for more than 40 years, without a failure. It is as follows :

For every 100 lbs. of beef, 7 lbs. salt, 2 oz. saltpetre, 1½ lbs. brown sugar, 4 gals. water. Boil and skim, and pour over the meat when cold. If properly packed, that amount of water will cover the meat.

For pork, pack the hams and shoulders together. To every 100 lbs take 8 lbs. salt, 4 oz. saltpetre, 1½ lbs. sugar, 4 gals. water.

The hams and beef for drying may be taken out after four weeks. To keep the meat after warm weather, the pickle will have to be boiled.

Oiling Farm Implements.

The Boston *Cultivator* gives the following sensible and practical advice to its readers :

“Every farmer should have a can of linseed oil and a brush on hand, and whenever he buys a new tool, he should soak it well with the oil and dry it by the fire or in the sun, before using. The wood by this treatment is toughened and strengthened, and rendered impervious to water. Wet a new hay rake and when it dries it will begin to be loose in the joints; but if well oiled, the wet will have but slight effect. Shovels and forks are preserved from checking and cracking in the top of the handle by oiling; the wood becomes smooth as glass by use, and is far less liable to blister the hand when long used. Axe and hammer handles often break where the wood enters the iron; this part particularly should be toughened with oil to secure durability. Oiling the wood in the eye of the axe will prevent its swelling and shrinking, and sometimes getting loose. The tools on a large farm cost a heavy sum of money; they should be of the most approved kinds. It is a poor economy, at the present extravagant prices of labor, to set men at work with ordinary old-fashioned implements. Laborers should be required to return the tools to the places provided for them; after using, they should be put away clean, bright, and oiled. The mold-boards of plows are apt to get rusty from one season to another, even if sheltered; they should be brushed over with a few drops of oil when put away, and they will then remain in good order until wanted.”

INSECTS AS FOOD.

The Rev. Dr. Nash is publishing in Zion's Herald a series of articles on "Insect Life." On the subject of food he says:

"Man does not refuse to use insects as food. Even we, highly civilized as we are, do not reject the lobster, the crab, or the shrimp, which, though not strictly insects, are only articulate animals, and until recently, were classed with insects by our best entomologists. Now the Arab would be disgusted to see us feeding on lobster salad; yet he finds great delight in masticating a locust. In both the Indies epicures eat the grub of the palm weevil, which is as large as your thumb; and Sir John La Forey concurs in opinion with the ancient Greeks mentioned by Ælian, esteeming a roasted grub very delicious food.

"Pliny tells that the Romans regarded the locusus—probably the larva of *Prionus Coriarius*, found in the oak—a very great delicacy. In Jamaica, and in the Mauritius, the grub of the *Prionus Damicornus*, which is as large as a man's finger forms an article of food. The Mexican Indians prepare a drink from a beetle (the *Cicindela curveia*), by macerating in water and spirits.

"Locust are an article of food in many parts of the world. The Ethiopians were called locust-eaters, on this account, by the Romans. The Arabs make them into bread, first grinding or pounding them and then mixing them with their flour. They not unfrequently eat them boiled or stewed. The Hottentots esteem them highly, and grow fat on them. They all make their eggs into soup. Their traditions teach that they are indebted to some great conjurer for the coming of the locust. He lives a long way northward, they say, and removes a huge stone from the mouth of a deep pit, so that the locusts escape and fly to them for food. The Moors of Barbary prefer them to pigeons.

"*Cicada*, according to Athenus and Aristotle, were highly relished among the ancient Greeks. Pliny says the Parthians used them freely for food. Our native Indians were fond of them, as were those of New South Wales.

"The Chinese, who cannot afford to waste any edible thing, cook and eat the chrysalis of the silk-worm and the larva of the hawk moth. The caterpillars of butterflies are eaten by the natives of New Holland, and also the body of the butterfly called bugong.

"Ants have their places with articles of human diet. Hottentots eat them both raw and boiled. East Indians mix them with flour and convert them into a popular pastry. In India ants are used to flavor brandy.

"In Ceylon bees are used for food. In New Cale-

donia the people eat a large spider (*Araner ebuis*), esteeming it a luxury. Reaumer says he knew a young German lady who ate spiders. It is recorded that Anna M. Schurement ate them like nuts, and declared they were not unlike that fruit in taste. Lalande, the celebrated astronomer, was equally fond of these delicacies. Rosel knew a German who spread them on his bread like butter. Humboldt caps the climax of these edible monstrosities, assuring us that he has seen Indian children drag centipedes, eighteen inches long and more than half an inch broad, from their holes and devour them.

"While these curious facts illustrate the adage that there is no accounting for tastes, they also show that insects are useful as food for man, and that in great extremities he might be saved from destruction by placing them among his articles of diet. But I have written enough on the uses of insects—enough to show that the Great Architect of nature did not create these curious little animals in such vast numbers without a purpose. Small as they are, and contemptible as they appear, their countless numbers and varied powers to do both good and evil, constitute them one of the most important forces in the economy of nature. By merely destroying a few classes of insect-fauna, and thereby permitting the others to multiply indefinite, the Almighty Ruler could bring about the entire destruction of the human race in a surprisingly brief period of time."

KEEPING WINTER APPLES.—With other modes of saving apples all winter and far into the spring, we have more than once suggested that generally adopted in New England, New York and the north-western States, which is to pick them carefully from the trees, sort them out and put them in dry flour casks, pressing them down closely and heading them up. They should be allowed to stand under a shed until cold weather sets in and then be removed to a dry cellar or some place where they will not freeze. Care must be taken that none but perfect fruit is barreled. We saw the other day one of our best farmers of Montgomery county putting up his apples in this manner, and he told us that they frequently kept until early hay making.—*Germanatown Telegraph*.

COTTON SEEDS FOR SMYRNA.—A new branch of commerce has just been opened between this country and the southern part of Europe and Asia. An invoice of forty-five tons cotton Seed was shipped last week from New York to Smyrna for the purpose of planting, the object being to start the raising of cotton in those sections from American seed.

The Apiary.

BEE KEEPING—PAST AND PRESENT.

My old friend, of whom I purchased my first stock of bees, and received my first lessons in luck, was an extensive bee-keeper. He had added hive to hive until he reached, at the end of one prosperous season, the unprecedented number, FIFTY. "Unless he could make \$100 from his bees, he did not consider they had done well at all." The way he got the \$100, when he did, was to count \$5 for every swarm that issued and twenty swarms made the amount. As he usually wintered about twenty stocks, he sometimes made out his \$100. But before he made it available for buying a horse, he must kill the bees of his twenty hives, take out the honey, and by selecting the very best pieces from each, he could command "a shilling a pound."—Combs from the middle of the hive were strained, and the honey sold for eight and ten cents per pound. From thirty to forty pounds were often obtained from a single hive. Distributing this to the different families of the village, six miles away, was the work of several weeks. This result followed only the most prosperous seasons. Quite often they did not swarm at all, or a very few would issue, and then again, many that did issue, would go to the woods. As he had adopted the rule of letting bees do just as they had a mind to, there seemed to be no help for this, but "hope for better luck next time." I was taught another rule. "Never bother with bees by putting on boxes and robbing them." "It wasn't likely that they would collect more than they wanted for their own use." All that was allowable, was simply to drum on an old tin pan when they swarmed, hive the bees, set the hive on its stand to wait till wanted for the honey, or destroyed by the worms. To turn a hive bottom up was fatal, as was abundantly proved. A neighbor wished to inspect the interior of one, and turned the hive over; in a few weeks it was dead.—"Served him right." His better half told him better; "any body might know that turning a hive over it would kill the bees."

AN ADVANCEMENT.

It was found by repeated experiments that a colony of bees, in a good season, would collect much more than an ordinary hive would hold; and by adding boxes to the top, with holes for communication, they would on some—if the boxes were changed as filled—store an amount equal to the whole contents of the hive, and of greatly superior quality. This could be removed, and the hive contain stores sufficient for winter. Keeping bees in this way was found to be doubly profitable—al-

most like "eating the cake and keeping it too."—It was eating the honey, yet keeping the bees to do same thing another year. It was a long stride beyond the first method. Then came the movable combs, indirectly adding large quantities to the total product.

Some progressive individuals, not content with double profits, continued their experiments with a view of a still further increase by adding more boxes to the hive. The additional room, with a strong colony, had a tendency to prevent swarming and when no swarm issued, and sufficient room was given, the ordinary amount was quadrupled. One hundred and fifty pounds was not at all unusual over winter stores. I know a bee-keeper who manages his bees on this improved system, and has this year repeated, or even excelled the result of 1868. Will send to market considerably more than 20,000 pounds of surplus honey in boxes, of the best quality, put in the best style; commanding the highest price. Sales amounting to from \$5,000 to \$8,000. Bees all safe for another year, just as good as at first. Quite a contrast to the man who killed his bees to get the uncertain amount of very inferior honey.

Another principle of gain is offered for our consideration. The honey emptying machine has been gradually growing into favor for the past few years. I had one made a few years since, and gave it thorough test the present season. It is destined to work a revolution in bee culture.

A. J. Root, of Medina, Ohio, from 46 hives, with the aid of this, has taken over 6,000 pounds of the purest honey. We weighed accurately that obtained from one hive only, which gave us 361 pounds by September 1—75 pounds left. In one week—last of June—they collected 83½ pounds—best.

Enough has been done in this direction to show that when the empty combs are furnished to hold all that can be collected, twice the amount is secured that can be, when combs to hold it are to be constructed at the same time. When a hundred and fifty pounds extra can be secured by furnishing a set of extra combs to the bees, it is a great inducement to furnish them. Just at the time when needed most, a method of making artificial comb has been desired, which is acceptable to the bees, and not to be destroyed by the worms. Soon after a patent is secured, it will probably be on sale.—But let no clean, good combs be wasted this fall; save all for another year. Take measure to secure every pound of honey that can possibly be collected. The Mohawk valley has so far taken the lead in securing the greatest amount sent to market, and a fair prospect of its being continued.

—*Utica Herald.*

M. QUINBY.

THE MARYLAND FARMER

AT \$1.50 PER ANNUM,
PUBLISHED ON THE 1st OF EACH MONTH,
BY
S. SANDS MILLS & CO.
No. 145 West Pratt Street,
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S. SANDS MILLS, }
E. WHITMAN, } PUBLISHERS AND PROPRIETORS.

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Support Your Own Paper.

Farmers of Maryland should take a pride in giving a hearty support to the only agricultural magazine in their State. The "MARYLAND FARMER" commences its eighth volume in January next, when every farmer in the State should be enrolled on our books—and can be, by sending us the trifling sum of \$1.50—thereby securing a first-class agricultural book of 480 large octavo pages, treating upon agriculture and its kindred sciences. We are now making an effort to swell our circulation to 12,000 for 1871. Will our friends throughout the country second our efforts by a personal interest in securing subscriptions? Clubs of five and upwards supplied at \$1 each—making it the cheapest, as it is the best, agricultural magazine in the country.

RENEWALS.

The subscription time of a large number of our readers expires with the present number of the *Farmer*. Money sent in any time previous to the first day of January will be properly credited and subscriptions extended accordingly.

To Postmasters.—Postmasters are authorized to act as Agents for "THE MARYLAND FARMER," to whom a liberal discount will be allowed.

CONTRIBUTORS TO THE MARYLAND FARMER FOR 1871.

The following gentlemen have consented to contribute to the columns of the MARYLAND FARMER during the year 1871, and we expect with the assistance of such a corps to add greatly to the popularity and usefulness of our magazine. This is only a partial list. The January number will contain many additions. With this arrangement and great improvements in the typography to be inaugurated with the first number in January, we hope to present a standard agricultural monthly that will commend itself to the farming and gardening interest of our State and States south of us:

Col. W. W. W. BOWIE.
Gen. GEO. W. HUGHES.
Hon. BARNES COMPTON.
BENJAMIN HALLOWELL.
Dr. E. J. HENKLE.
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JOHN B. RUSSELL, of the Department of Agriculture, Washington, D. C.
ROBERT SINCLAIR, Esq.
B. W. JONES, Surry C. H., Va.

CHANGING POST-OFFICE.

Our friends in changing the address of their paper will please state the name of the *new* office as well as the *old* one. It is rather a troublesome task to look over some 6000 names to find out from what place he wishes the change to be made. We have had a number of remittances made us, not stating the post-office, that we have been unable to find on the books until after great delay, so as to credit with the amount. Our friends will be a little more careful in the future.

TO ADVERTISERS.

Our friends desiring to avail themselves of our advertising columns, as a medium of extending their business, are requested to send in the copy by the 15th of the month, as we are compelled to put the last advertising form to press by the 20th, so as to enable us to issue promptly by the 1st of every month.

A Present.—Those of our friends wishing to make a New Year's Present to a rural friend, could not do a better thing than forward the MARYLAND FARMER for one year, which would cost him only \$1.50. They can be mailed from this office.

CHEESE FACTORIES AND CHEESE MAKING.

Few persons have any idea of the vast amount of cheese made in the United States, both for home consumption and exportation. It is not easy to compute the value of that which is consumed by our home markets, but the value of that exported is over ten millions of dollars. This foreign demand is not at all likely to be diminished; on the contrary, there is every prospect of a yearly increase. For ordinary commercial purposes, the American cheese is equal to the very best of its kind manipulated anywhere, whilst the cost of production is so much less, as to enable it to compete successfully, even with the expense of transportation added, with foreign cheese in its own markets. The evenness of its quality, combined with its cheapness, is due, in a great measure, to the associated dairy system, a species of co-operative labor, which has worked, in this instance, with remarkable success. An interesting account of the rise of this associated dairy system is given by Mr. Willard, of New York, in the Agricultural Report for 1865. He says: "About the year 1860, the associated dairy system began to attract attention. Several factories were in operation in Oneida county and were turning out a superior article of cheese. The system had been first inaugurated by Jesse Williams, a farmer living near Rome in that county, and was suggested by accidental circumstances. Mr. Williams was an experienced and skilful cheese maker, and at a time when the bulk of American cheese was poor, this dairy therefore enjoyed a high reputation and was largely sought for by dealers. In the spring of 1861, one of his sons having married, entered upon farming on his own account and the father contracted to sell the cheese made on both farms at seven cents a pound, a figure higher than was being offered for other dairies in the vicinity. When the contract was made known to the son, he expressed grave doubts as to whether he would be able to manufacture the quality of cheese that would be acceptable under the contract. He had never taken charge of the manufacture of cheese while at home, and never having given the subject that close attention which it requires, he felt that his success would be a mere matter of chance. His father therefore proposed coming daily upon the farm and giving the cheese making a portion of his immediate supervision. But this would be very inconvenient, and while devising means to meet the difficulties and secure the benefits of the contract, the idea was suggested that the son should deliver the milk from the dairy daily, at his father's milk house. From this thought, sprung the idea of uniting the milk from several neighboring dairies and manufacturing it at one place.

Buildings were speedily erected and fitted up with apparatus which, proving a success, thus gave birth to the associated system of dairying now widely extended throughout the Northern States."

While in the State of New York alone, the land taken up with associated dairy farming is valued at about forty millions of dollars, in the middle and border Southern States, very little attention has been given to the subject, although an attempt is now making in Tennessee to carry on the operations on a large scale, and expert cheese makers from the North have been engaged for that purpose. There is no better grazing land in the United States than can be found in Maryland, Virginia and Kentucky, and the grazing season in these States extends for two months longer than the season at the North. There is, therefore, no reason why the cheese factory system should not prove quite as profitable—to say the least—in these States as in New York. It is true, the latter is somewhat nearer the export market; but, on the other hand, land is higher and labor certainly dearer. But the manufacture can only be carried on with the greatest economy on the associated system, and the ability of private dairies to compete, is out of the question. One of the most important considerations in securing a high value for cheese, when sold to the wholesale dealers, is the uniformity of its quality. Some of the Northern factories have a number of cheeses, weighing in the aggregate, say a hundred thousand pounds, so uniform in appearance that the most practiced eye can scarcely detect any difference in them or in their quality.

One of the greatest advantages, however, apart from the economy of labor and uniformity of results, is the relief of the farmer's family from the constant care and attention and the severe drudgery which cheese making calls for when entrusted to private hands. Mr. Willard remarks: "As the same process has to be gone through with in manufacturing cheese, whether the quantity be large or small, and as nearly the same time is also occupied, it will be seen that what requires the labor of many persons to do when cheese making is divided up into families, can be accomplished with but few persons on the factory system, some five or six being sufficient to do all the work about an establishment manufacturing the milk of a thousand or more cows."

It is only, however, in thickly populated farming communities, where the grazing land is good, that the associated system of cheese making is possible. In the vicinity of large towns, it is more profitable to dispose of the milk to families, or to turn it into butter. But in purely agricultural regions, such for instance, as the Valley of Virginia, the Glades of Maryland and the Blue Grass region

of Kentucky, and especially where railroad facilities are afforded, large herds of cows can be profitably grazed by one or two adjoining proprietors and the factory system established. The smallest number of cows upon which a cheese factory can be judiciously started, is four hundred; but in the grazing districts in question, the quality of the milk will always be good and the cheese makers would not have to contend, as at the north, with the difficulty of detecting adulterated milk, the labor of drawing the supplies from individual farms, covering a large district of country and the chances of souring—the quality of the milk moreover would be much more likely to be similar, from the fact that the grasses and the mode of feeding would be the same, and knowing how profitable in the grazing districts we have mentioned, cheese making on a large scale might be made, we should be glad to see this branch of rural industry receiving, in the Middle and Border States, the attention which it really deserves.

THE "FARMER"—ALSIKE CLOVER.

An esteemed correspondent in Cumberland, Md., in renewing his subscription for 1871, pays our *Farmer* the following flattering compliment: "I must say without intending to flatter you that the perusal of your journal has afforded me much useful information. I have noticed many well written and excellent articles, giving useful information on various agricultural subjects. I have been doubly repaid my subscription for the information I derived from one single article on the cultivation of Alsike Clover. It induced me to try it, and I have been more than pleased with the result. I wish every farmer in the State would adopt the use of it. The pasture, as also the hay, cannot be excelled, and I think it superior to any other."

Routt's Premiums at the late Virginia Fairs.

We are pleased to note that our enterprising friend, A. P. ROUTT, of Liberty Mills, Va., a highly successful and well known inventor and manufacturer of several important labor-saving implements, received at the late Fairs held in Virginia, the following first premiums:

At the Wytheville Fair, Va., first premium for best Corn Planter, Drain Plow, Double Shovel Plow, Harrow, Single Shovel Plow, Marking Plow, Corn Coverer and Kneading Machine.	9	premiums.
At Lynchburg Fair	6	"
At Staunton Fair,	3	"
At Richmond State Fair, (4 medals, 2 diplomas,)	6	"
At Leesburg, Loudon Co., Fair,	2	"
	26	

Thomas Norris & Son, Baltimore, are the Sole Agents for Routt's Double Shovel Plow, and can supply all implements of his invention and manufacture.

Kinds and Preparation of Soil for Potatoes.

The best soil, probably, aside from burnt land, for growing sound, mealy, and healthy potatoes, and which is accessible to agriculturists in general, is a light, loamy, green-sward pasture land, moist but not wet, and sufficiently fertile to produce one hundred to one hundred and fifty bushels per acre, with the common alkaline fertilizers applied to the hills. It is very important to select a soil congenial to the growth and perfection of the potato; for, unless this is done, good potatoes cannot be grown even from the best varieties. It should be plowed in autumn as deeply as possible, and sufficiently early for the sod to decay by the next spring. Early in the season, as soon as the ground is dry enough to work, it should be cross-plowed, and carefully harrowed, so as to mellow the soil, and pulverize it thoroughly. If the land is not sufficiently fertile, it will be safe to manure it carefully with a compost of lime, ashes, and muck spread evenly on its surface before cross-plowing. If a great crop is desired, and there is no fear of rot, the land may be heavily dressed with barn-yard manure, and a crop of corn, which will bear stimulating fertilizers, taken from it the first year, and potatoes the next. The barn-yard manure would become so much decomposed during the year, that no very serious injury need be apprehended, provided ashes or gypsum are used in hills. Old land, or that which has been previously cultivated in some other crop than potatoes, should be plowed deeply and thoroughly pulverized.

BORING FOR WATER.—A *Rural New Yorker* correspondent in Kent Co., Md., says that a well dug to obtain water for a steam saw mill in his neighborhood, (that of the creek near by being too salt for the purpose), reached a depth of 18 feet without success, though water is nearly always found there at 12 or 15 feet. Part of an old cart-wheel tire was then welded to an ordinary two-inch auger, and turned with a monkey wrench, four feet farther down, through a stratum of blue clay, when water was struck, coming through, on withdrawing the auger, so fast as nearly to fill the well, and affording a supply unaffected by the demands of the engine: "The water is good, soft and very cool. I mention this, as I feel sure there are many places where the same thing could be accomplished with little expense, especially in such formations as the Eastern Shore of Maryland."

TO SWEETEN CIDER BARRELS.—Wash the barrels in ashes and water, rinse thoroughly, and put in a pint of clear water, and one large spoonful of oil of vitriol; shake well, and rinse with cold water. Husband always cleans beef and pork barrels the same way.

FOR THE MARYLAND FARMER.

CONCENTRATED AGRICULTURE.

It is evident that reform *must* come. A radical change in our system of agriculture *must* take place. We are posting on to ruin at too fearful a rate; and the sooner some daring hand shall light the torch of a revolution that shall inaugurate a wiser agriculture the better it will be for the hungry nations. Start not, reader, at the mention of a revolution.—It is inevitable, and must come—let us prepare to meet it bravely.

The demands of hungry peoples, crying "give, give;" and the oft repeated assurance from the nations toilers that they are overworked, that the acreage yield is annually decreasing, and that the area cultivated is too much for the force engaged, admonish us that a change must come. The inexorable Autocrat—Hunger—must be satiated, or other, and more-to-be-feared revolutions will convulse our little globe. Feed the nations, and you keep them at peace. But this cannot be done if the true interests of agriculture are neglected. When we see no legislation in favor of agriculture; when an unwise practice of half-working many acres annually diminishing the productive capacity of our lands; when the toilers assure us that, without a heavy addition to their ranks, the crops must decrease; when we see extensive drouths cutting short the yield that a ruinous system has heretofore given us; when we see two great nations drawing heavily upon the farms for men to fill their armies—institutions that are ever destructive to agricultural interests; and when we see that the annual increase of bread does not keep pace with the yearly increase of population, it is high time for us to arouse, high time to awake to a sense of our danger, yea, high time to look the inevitable in the face, and prepare for a reform.

Happily for us, and for the world, *there is a remedy*. Our lands are not exhausted. We believe that, under a judicious system of culture, the productive capacity of any soil is almost unlimited. Our mistake has been in cultivating too many acres with too little care and too little manure. Instead of concentrating all our skill, strength, and energy on a few acres, we have, expanded, so to speak, over too great an area. Our work has been too slovenly; and we have by far too much neglected manure—that *indispensable* in all wise agriculture.

Let us look across the sea to China and Japan nations that we have affected to despise for their want of progress and civilization. How do these great nations manage to feed and clothe one-third of the human race. They import nothing. How do they make the bread for 350,000,000 of people? *By concentrated agriculture*. By thorough cultivation, and by a careful saving and a skillful application of

manures. Every item that they take from the soil is returned to it again. They cultivate by hand, with the spade and hoe, their little farms of five or six acres. It is *thorough* culture—it is *deep* and *clean* culture—neatness and order, skill and system mark all their labor. This has been their system for more than a thousand years, and still they have not exhausted farms. The thing is *impossible*. They are too careful to make and save manures.

Here then is a lesson for us. If *they* succeed by such a method why not us? With all our science to aid, shall we allow *the heathen* to out do us in the most important calling that ever engaged the attention of man. No—forty millions of people, a great and growing nation of farmers and of freemen answer, "no." This is well. But, in the meantime, some one must *act*. The initiatory steps has yet to be taken. Who will have the *energy*, the *moral courage* to make the *first move* in this direction?—Who willing to meet the ridicule, the gibes of old fogies, and young fogies too, that would belaunch at the luckless author of such an innovation.

Now, we do not say that the spade should supplant the plow, or human muscle alone be substituted for horse or mule power. What we advocate is a deeper and better cultivation of a small area; a regular system of rotation; the returning to the soil what we take from it, and as much more as we can besides, and to do this in the cheapest, best, and quickest way that we can devise. We think that every head of a family should own a piece of land, though it be but an acre, and that at least ten acres to every citizen should be exempt by law from seizure for debt; that it should be his and his heirs forever.

The tendency of the times is to universal suffrage, and to "go it upon our own hook," in most industrial callings, especially in agriculture. Large farms are becoming impracticable. Our people like to improve what they work upon. The salutary teachings of the agricultural press are making us displeased with the old tumble-down, unsightly things of the present. We want to improve, beautify, and adorn. We want *houses*, not mere dwelling places. But a system of renting and cultivating on shares never inaugurates any of these things. One must have a *life interest* in land to be willing to improve it much. Let each and every man then own a farm, and *learn to work upon it too*. If he has a family and has no land for producing fruit, vegetables, and flowers, he is guilty of a moral and physical wrong to them, and to the nation. Indeed we think that every head of a family *should be compelled by law* to own a house.

No one can duly estimate the good effect that such a law would have upon this nation, and remotely upon the whole human family. Then all our hill-

sides and valleys would teem with populous and happy homes; pleasant cottages and cottage gardens would dot our prairies, and stretch along our railroads and rivers to the remotest bounds of the continent. Peace and plenty would give joy and gladness to the world. Arts and manufactures would flourish as they have never flourished before. The hungry of other lands would come to us for bread; and we should be able in a great measure, to prohibit wars and strifes among the nations.

All this is no *fancy* originating in the romantic brain of the writer. It is just what the *great future* will bring with it. This universal suffrage—a thing inevitable—*unless restrained by religious influences working on the hearts of those who exercise that suffrage*, will bring about mighty and dire political revolutions that shall convulse the globe. The *only hope* of peace among the nations is in an honest, educated, industrious, and *religious* yeomanry, *owning the soil they cultivate*.

Seeing the danger before us then, let us begin, betimes to do the only thing that can save our posterity from the *miseries* of a world at war. Let us begin to establish our garden farms. Let us learn to practice high culture. Let us *concentrate*, and thereby gain time for mental culture and recreation, and preparing for a *higher and nobler* state of existence.

B. W. JONES.

Cottage Home, Surry, Va.

Report of the Iowa Agricultural Society.

We have received from the Secretary of the Society, J. M. Shaffer, Esq., his report for the year 1869. It is a volume of 420 pages, embracing a highly interesting report of the Secretary, giving full statistics of the agriculture and railroads of the State—proceedings of the regular meetings of the Society—with reports of committees, also abstract reports of the County Agricultural Societies of the State. The essay department contains "Prize Essay on Wool Growing in Iowa—including the preparation for market, and marketing the wool"—"Chemistry of Agriculture," by A. F. Hays—"On Timber Growing as a source of Farm Profit," by Jos. L. Budd—"On the principles and Plans of Landscape Gardening, as adapted to beautifying the homes of farmers," by Mrs. Thos. McGriffin—"On Osage Hedging," by Francis Mathews, &c., &c. The address of J. M. Shaffer, Secretary, is Fairfield, Jefferson Co., Iowa. The volume also contains the report of the Secretary of the Iowa State Horticultural Society for the year 1869, by D. W. Adams, Esq.

Transactions of the Wisconsin State Agricultural Society.

We are indebted to J. W. Hoyt, Esq., Secretary, for a copy of the Transactions for 1869; it contains, including Horticultural Report, 520 pages, and embraces annual reports on Agriculture, Manufactures, Commerce, Immigration, Agricultural Societies, &c. It gives a general account of the annual exhibition, with addresses delivered, and a number of essays of a highly practical character, making it a valuable book for the farmers of that section. Address of J. W. Hoyt, Secretary, Madison, Wisconsin,

Fair of the Cotton States Mechanic's and Agricultural Fair Association, at Augusta, Ga.

In other days a yearly gathering of agriculturists was considered quite enough to discuss improvements and consult as to the demands and plans of the future. Now we have County Fairs, State Fairs, and in the same city we have two important gatherings imbued with the hope, that all feel sure of realization in the South, as a commercial and manufacturing people, in connection with their agricultural products. The addresses of the various speakers evinced a proper appreciation of the objects for which they were convened, and the discussions were based upon facts that were idle to reiterate. We regret the want of room for the remarks of the chairman, Dr. W. H. Tutt; they displayed a comprehensive knowledge of the subject, and sketched with a master's hand what in the future is in store for the Cotton States.

Our own State was well represented by the Hon. John Merryman, Hon. Barnes Compton, President of the Maryland Senate, Lawrence Sangston, Esq., and Edward Herbert. Among the other distinguished gentlemen present was the present efficient head of the Bureau of Agriculture, Hon. Horace Capron, whose very able address, delivered on the Fair ground, will be found on another page.

We regret our unavoidable absence in being unable to participate in an assemblage that is destined to accomplish so much practical good.

Hon. Barnes Compton, President of the Maryland State Senate, was called upon, on the first day of the Fair, at a moment's notice—to fill the place of Judge Lyons, of Richmond, the regular chosen orator for the occasion, but who failed to reach the ground in time—to address the large assemblage, and which gave great satisfaction to his hearers. The address having been delivered without notes or preparation, we are indebted to the *Chronicle and Sentinel* for the following imperfect sketch:

He said that though his having to deliver the address was a very agreeable duty and though he could not but feel honored by the request of the Association still he must think that he had been the recipient of an undeserved compliment. In obedience then to this sudden summons he was here to perform his allotted part in the ceremonies of the occasion. Totally unprepared for a call of this nature, without having had time to prepare himself or dress his ideas with words, he arose with strange feelings to speak to the great audience before him. Though called upon to attempt an address upon agriculture he keenly felt the trying nature of his position in having to speak in the presence of men who had grown old, aye, and great, in that pursuit. In presence of so many new and strange faces even his very voice came back to him in unfamiliar tones. But he would be less than a Southerner, less than a Marylander, less than a man if he could not find something to say upon such an occasion.

The gentleman who had preceded him had delivered such an eloquent and elaborate address that he felt that the entire ground had been covered, and it was with unfeigned modesty that he lit his tallow dip and placed it in the rays of the meridian sun. He was there, however, to talk of facts, of the material interests of the South, and to suggest what to him seemed best calculated to promote the prosperity of the South and of her people, Agriculture

was properly regarded as the basis of all solid and lasting prosperity, and of all callings it was justly, the most honorable and the most honored. It was the most independent and ennobling pursuit. The hard working farmer when his daily task was done rested under the shade of his own vine and fig tree with nothing to disturb or molest. In the light of ancient and modern history, through the teachings of the press and from daily experience he had found that farmers, taken as a class, were the noblest works of God, honest men. As a general thing they were free from passion or prejudice, and when politics, creed and capital—political rancor, religious bigotry and moneyed power—laid hands upon the pillars of the country, could alone rescue it from the peril. It was due to the fact that the South had been an agricultural section that in the history of the country her sons had stood pre-eminent for courage, patriotism and intelligence, and when the desolating ravages of war shall be repaired her children will again take that position. Though neither a prophet or the son of a prophet he would predict that when the agriculturists again get in power the country would have a record the most glorious since the time Southern men controlled the government. He did not wish it to be understood by these remarks that he was a sectional man, for he was not—he only stated facts. It was not because the South had held the reins that the country had been so prosperous, but because her people had been an agricultural people—it was agriculture which had given power. He was aware that a new condition of things existed in the Southern country. Labor had changed and other things had changed—and practice must change with them. If the Southerners desired agriculture to flourish once more; if they desired their lands to be reclaimed, and their labor system to be made more efficient they must discard many old ideas. Large tracts of land must be divided up into small farms and one acre of ground made to produce as much as ten acres. When the people should fully determine to take this step they would enter upon a path which would soon lead them to more than their former greatness, glory and prosperity. No man who had been accustomed to plant on large tracts of worn out land could realize what his annual profits would be if the large area should be cut up and the same care and cultivation given to one acre that had formerly been given to ten acres. The theory of employing large gangs of laborers and superintending the cultivation of immense plantations was exploded. We must have small forces of skilled and intelligent laborers, and instead of spending the profits on the purchase of more land we must husband surplus capital and employ it in the construction of railways and other works of internal improvement. Another mode of investing money, and one which would be wise and judicious in the highest degree, would be the education of the colored laborers. Take this matter out of the hands of foreigners and let it be done by the Southern people. Let them be taught that the interests of the two races were identical, and that they must be friends. Disabuse their minds of the poison instilled into them, and reconstruct them.

On the question of manure, he said he did not know how much was used in the country, but he did know that the salvation of the South depended upon the cutting up of large estates into many small ones, and manuring the soil heavily. He was struck while travelling here at the vast tracts of waste land which bordered the tracks of the railway. He had been told that this land was poor and unproductive, but he believed that if properly cultivated it could be made to yield heavily and remuneratively. He had seen no clover either between Petersburg and Augusta, and did not know how, without it, the people managed to exist. He had been informed that clover would not thrive here, but he would not believe it until assured of the fact by some respectable gentlemen who had tried the experiment. If some man would try it—who would purchase an acre of ground, manure it heavily and cultivate it carefully, plant it for two years in clover, and then turn the clover stubble under and plant cotton and fail to make money, himself and the Treasurer of the Maryland State Agricultural Society would pay the damages upon application.

Railroads were also much needed in the South, and he was gratified at seeing that many were in process of reconstruction. Though he knew many of these were run on paper he was also glad to find that several ran on *terra firma*. The people must not be afraid of having too many of them, or of running them parallel to each other. Run them anywhere and everywhere, and with every new one finished there would be a perceptible increase of labor, wealth and prosperity. Emigrants must be brought into the country, no matter where they came from, or who they were so they be industrious laborers. We do not want politicians, but we do need laborers. He said that though he had spoken upon brief notice and without preparation one thought had struck him which he would advance. While he believed that nothing was more desirable than material

prosperity, still he did not believe in the Utilitarian theory which obtained in many of the Northern States. While money was a good thing it was not everything, and

"[I]l fares the State to foes an easy prey,
Where wealth accumulates and men decay."

The high tone, the honor, the noble traits of the Southern people must not be allowed to die out. Southern chivalry must not be reconstructed. And he did not believe that it ever would be. Let fate do its worst; there were some though, thank God, which could not be destroyed.

"They may break, they may shatter, the vase if they will,
But the scent of the roses will hang round it still."

He would say again reduce your area, encourage emigration, remodel your labor system, improve your machinery, but stand by your household Gods. Let the result be what it may the truth stands that agriculture is not only the foundation of prosperity but is the very ark of safety. He advised them to have little to do with politics, but to reconstruct their material interests, and resolve to be independent in all things, and in due course of time the wrong will be made right, the dark will be made bright and constitutional liberty will dawn again.

He said that all he could say would be very unsatisfactory, unprepared as he was, and he would leave his audience to fill the picture the outlines of which he had given, but before he closed he would make one remark, and he would make it in the face of all that enemies had said to the contrary. During the war, when the cannon's thunder reverberated among the hills of Maryland, when her shores shook with the tread of hostile armies, and the country was drenched with gore, the people of his State, with one accord, had knelt and prayed "God Save the South;" and now, when the war was over, the drums muffled and the flags furled, the same people, upon bended knees, made the same prayer, "God Save the South!"

The attendance upon the grounds was large and much enthusiasm was manifested. The tournament was participated in by twenty-two Knights. Harry, of Navarre, proving the successful one, winning the honors and a horse, valued at \$500. After the tournament a grand ball was given. There was also a double trotting match, and a number of trials of single horses, a grand display and trial of fire engines. In short prizes were awarded for every conceivable article of implements, stock, wagons, home manufactures and industries, that made up an exhibition that has seldom been surpassed.

PHOSPHATE OF LIME.—Lime combines with phosphoric acid in variable proportions, and forms several compounds. Of these, by far the most abundant, and certainly the most useful in agriculture, are the earthy parts of bones, and a native mineral, called *phosphorite*. And it occurs, but less abundantly, in corals, oyster shells, and in the shells of other fish; in the teeth, horns, nails, hair and other parts of animals; and in the horny wings and covering of numerous insect tribes. It also exists in minute quantities in nearly all limestones and marls; probably there are few fertile soils in which it is wholly wanting. It likewise forms one of the ingredients in the grain, straw, stalk or roots of most cultivated crops; and hence, is indispensable to their perfect growth and maturity.

JUDGE of the season's labours not alone by your successes, but by your failures. A failure often teaches a man more than a success.

AGRICULTURAL CONGRESS AT AUGUSTA, GA.

Every step to promote the industry of the fairest portion of our country, acquires an increasing importance to all our readers. We have felt much interest in the discussions and addresses delivered at this Congress, and the facts developed show how much of various crops may be judiciously cultivated, so as to raise what is sufficient for home sales and consumption, as well as what is the limit for export of cotton and cereals, to prevent too great a reduction in price. With her varied climate the South is able to produce Cereals, Cotton, Wool, Jute, Hemp, Tobacco, Corn, and other crops, and it is in the intelligent selection of such proportions of each that her people are to look for future profits.—It is manifest that in a few years she is to become a great wool growing and cattle raising section, and it is to her we are to look for those cheap and pure wines that are to be the beverage of “the coming man.”

Meetings such as were held at Augusta, where notes are compared and where decisions are arrived at as to what is in demand, will enable the agriculturist to select such crops as will meet with a ready market, and this, together with the Reports of the Commissioner of Agriculture, will give them such a fund of information as no other channel could afford. We are glad to notice the attention given to the improvements that science has contributed to this the most ancient as well as the most honorable of callings, and the determination expressed for “the establishment of a department of agricultural chemistry and vegetable physiology applied to agriculture.” This is the proper spirit for our friends to manifest; all they need is patience and the opportunity to develop their resources, and before those who are now in middle life have reached old age, the empire of the cotton trade will be established where it properly belongs.

The prospects are so cheerful that we hope to see each succeeding Congress take up its work with the same earnestness that characterized the inaugural session, and the South will then become the most fruitful and the most prosperous portion of our country.

The following gentlemen were elected officers of the permanent organization:

President—Hon. H. V. Johnson.

Vice-Presidents—Hon. Mark A. Cooper, of Georgia; Capt. R. M. Nelson, Alabama; Lee R. Shryock, Missouri; James Lyons, Virginia; Hon. Barnes Compton, Maryland; Dr. R. C. Foster, Tennessee; R. J. Spurr, Kentucky; Dr. R. B. Johnson, Mississippi; A. M. Scales, North Carolina; M. L. Bonham, South Carolina.

Correspondent Secretary—Gen. A. R. Wright, Ga.,

Secretary—LaFayette Carrington, Georgia.

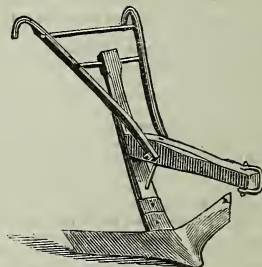
Treasurer—J. J. Cohen, Georgia.

Maryland was represented in the Congress by the following gentlemen: Hon. John Merryman, Hon. Barnes Compton, President of the Maryland Senate, Lawrance Sangston, Esq., and Edward Herbert.

There were also present as representatives of the District of Columbia the Hon. Horace Capron, Commissioner of Agriculture, and Gen. J. R. Dodge, Statistician of the Agricultural Department.

The next Congress will be held at Selma, Alabama, December, 1871.

IMPROVED DICKSON COTTON SWEEP.



The above cut represents the great Dickson Cotton Sweep, invented by Mr. David Dickson, the well known cotton grower of Georgia, and probably the most successful raiser of that staple in the Southern States. It is fast taking precedence where ever used, and no cotton planter can afford to be without them.

It has heretofore been made of iron, the edges soon becoming dull and the rough surface clogging in sticky soil; but the Polished Steel Sweeps cut the grass instead of passing over them, and cleans perfectly in any soil. They are now manufactured at the establishment of E. Whitman and Sons, Baltimore.

LIMA BEANS.—A correspondent in the *Country Gentleman* gives a “most successful mode of cultivating the lima bean. The principal secret is in getting the seed well started. The best way of doing this is to plant in a hill of light earth, made so by sifting the soil, if it can be had in no other way. A shovel full of well rotted manure should go into each hill. I mix sand and muck in my cultivation, and after placing each seed bean with the germ downward, by hand, in the hill, pass the covering for it through a coal-ash sieve, to the depth of half an inch. Corn planting time is about the proper season to plant lima beans. The after cultivation is the same as for the common pole bean. The seed should consist of well ripened, sound beans.”

Young men, stick to the farm!

Horticultural.

Covering the Vines and Plants.

The advice cannot be too often given to all who cultivate vines and plants, as to their protection through the winter and early spring. We have found, after a good many years of experience, that there is no mode so sure of guarding all vines and plants not entirely hardy against our occasionally severe winters, as *laying them down and covering them with soil*. Of course we mean those which can be so treated. The covering should not be more than two or four inches, according to the nature of the thing laid down. If too much earth is used, the buds, from the heat of the ground in March, may burst too early, and may be damaged by a late frost when taken up, which should rarely be done before the first of April. All young grape-vines should be laid down, though it will prove of great benefit, in our judgment, to *all* grape-vines, young and old, hardy or otherwise, to prune them and lay them down and cover them with a few inches of soil. Nearly all raspberry canes should be pruned and laid down; so should roses that are liable to damage from the frost. Strawing up roses and other deciduous flowers and shrubbery, as it is usually done—that is binding them as tightly almost as a pole—is far more injurious to them than no protection at all. Where strawing-up is resorted to it should be applied *only on the side exposed to the sun*.

All flower borders should have a good covering of stable-manure—horse-manure being very good for this purpose. In the spring the long stuff should be raked off, and the rest forked in. It will not only protect the roots against all injury during the winter, but the plants will appear in the spring greatly invigorated, and the flowers will be much more abundant and prove of much higher colors and greater beauty. Even leaves, straw, debris of any kind; or, if there be nothing else, a slight covering of soil will be of good service.

We trust that no one who values the things about the premises here referred to, will neglect this brief advice—and *November is the time to attend to it.*—*Germantown Telegraph.*

TOBACCO CROP.—The crop of Tobacco grown in Kentucky in 1870, according to the best estimates, will amount to about 90,000 hhd.; the crop in Illinois to about 15,000 hhd.; the crop of Indiana to about 25,000 hhd.; the crop of Missouri to about 30,000 hhd.; the crop of Tennessee to about 20,000 hhd.;—thus estimating the entire western crop at 180,000 hhd. It is believed Virginia and North Carolina's crop will amount to about 50,000 hhd.

Planting and Care of Trees.

F. K. Phoenix, of Bloomington Nurseries, Bloomington, McLean & Co., Illinois, gives the following instructions for planting trees:

Most planters are so careless! Friends, if you want trees to thrive, plant early, in dry, deeply plowed ground. Keep roots from sun, air and frost, burying in the ground again as soon as possible. If shriveled, bury tops and all in moist ground for ten days. Thin out and shorten in tops before planting, to balance the loss of roots in digging. Dig large, holes, 3 feet across and 2 deep, or better still, plow out very deep furrow, filling up with best soil, so that trees shall stand only as deep as in Nursery. Straighten out all roots in natural order, fill in with best fine, moist earth, and then tread down thoroughly watering well, if dry, before filling up. Then **MULCH**—that is cover the earth 2 feet each way from stems with coarse manure or straw, 6 inches deep. Always put corn or some hoed crop, **NEVER** grass or grain, among young trees. All trees and plants in grassy yards, and dwarf tress also, must have special care. Wash bodies of apple trees in spring with strong soap suds. Kill off the caterpillars and leaf rollers. Let fruit tress head low—within 3 or 4 feet of and Evergreens from, the ground.

Orchard.

But little out-of-door work can be done in the orchard in winter, yet it should be occasionally visited, to see that no accidents have happened to young trees. The nurseryman, however, has a plenty to do, and there is no reason why the orchardist should not be to some extent his own nurseryman. Stocks are raised with little trouble, and the operations of budding and grafting are very simple. Many think that the best possible trees are obtained by planting seedlings, and then grafting them in place. Root grafting is done, in the house in winter, upon the roots of one-year-old stocks; the grafted stocks are kept in the cellar in boxes of earth until spring, when they are set out. There is a growing prejudice against root-grafted trees, but if they are grafted at the collar, not on pieces of roots, there is no reason why they should not make good trees. When there is leisure, see that all trees are properly labelled, or such a record made that any one succeeding the present owner can know what fruits are on the place.

WATER for stock, during the winter, is a matter of great importance. If anything is needed to provide a better supply than you now have, attend to it before the ground closes.

KITCHEN GARDEN.—Considerable work can still be done this month, in preparing for spring. Hot-bed sashes and frames may be made and manure accumulated. Several implements can be made, such as a marker, for forming drills; a wooden roller, for levelling the surface, after sowing, and all damaged tools repaired. Have a tool-house conveniently located, where all implements can be kept in place and under cover. Look about the neighborhood and see if some fertilizer is not going to waste that might properly go to the compost heap. Much is wasted at slaughter-houses, breweries, tanneries, and at various manufactories, that should go upon the soil. Overhaul seed and throw away all valueless stuff; consult authorities and see if you are raising the best and earliest of everything, as it takes no more space and care to raise a good plant than it does a poor one. Cold frames must be closely looked after; Cauliflower is less hardy than Cabbage or Lettuce, and the sash over this will need to be covered by straw mats on cold nights; if mice make trouble, poison or trap them.

WHEN TO PRUNE APPLE TREES.—A correspondent of the *Times*, Watertown, N. Y., gives the result of his experience in pruning apple trees as follows:—"It has long been a practice among farmers to commence pruning apple trees in February, mainly, I suppose, because there is leisure time. There are reasons why this should not be done. There will not be sufficient action in the tree to harden the surface where a limb has been taken off before the sap ascends in the spring. When this action does take place, the sap flows out and spreads over the surrounding bark, and by some chemical action which takes place, it is changed to a poisonous fluid, which greatly injures the tree. Trim your fruit trees in August, and I will guarantee you will have no black-hearted trees."

FRUIT GARDEN.—In the month of December do whatever has been put off; trim shrubs and vines during mild spells. If fruit is marketed, see if there is not some variety that will prolong the season at either end. The succession should be, early and late Strawberries, Raspberries, Currants, Blackberries, and Grapes. Gooseberries, as a general thing, are not valued, except green; the most generally cultivated variety is Houghton's Seedling, a native. Protect Raspberries by a covering of earth, and Strawberries by a mulch, if it was not done last month.

NEVER stint young stock. It is an error to keep young calves, lambs or colts short, and on poor refuse forage. It don't pay. They should have the best and as much of it as they need,

Grape Culture.

EXPERIENCE WITH GRAPES IN MARYLAND.

Eds. Country Gentleman:—I write to give you short account of my success in grape growing on the Eastern Shore of Maryland. In the spring of 186 I set one hundred one year old grape-vines upon soil having a southern slope and varying from a sandy loam to a heavy clay. The vines were within a few rods of one of the arms of the Chesapeake bay, and where the breezes from the water almost constantly blew over them. The first year I trained a single cane from each vine. The second year I trained two canes which last fall I cut back to four feet in length, and this season received the first crop of fruit.

As I can only write the experience of one year fruiting, the conclusions at which I have arrived may need to be revised and reversed in the future.

The Adirondac has, with me, been a feeble grower, liable to mildew, and the fruit of only ordinary quality. Allen's Hybrid is of strong growth, very prolific, leaf very liable to mildew and the fruit rot. Clinton, strong grower, hardy fruit, passable in quantity and quality. Concord, rapid grower, hardy in leaf and prolific in fruit. Creveling, free grower and good bearer; clusters loose; is, both in fruit and vine, peculiarly subject to the attack of the rose bug. Delaware, free grower, not subject to mildew, prolific in fruit, which is of first quality.—Diana, moderate grower, good bearer, fruit of fine quality. Hartford Prolific, very strong grower very hardy, and a profuse bearer; fruit falls from the bunches. Iona, feeble grower, subject to mildew; moderate bearer; fruit best in quality. Israella, a good grower, uncertain bearer, bunches large and fine. Ives' Seedling, very vigorous grower, very hardy, moderate bearer. Maxatawny and Rebecca, moderate growers—very shy bearers and liable to mildew.

Hartford Prolific, Ives' Seedling and Israella, ripened in succession from the 10th to the 15th of August. Creveling, Delaware and Iona in succession from the 15th to the 25th of August, followed by the Concord, Diana, and Allen's Hybrid, all ripening the last week in August. Clinton and Union Village, first week in September.

I make out a list of grapes in order of excellence. Those described which are not mentioned in this list, I do not think worthy of cultivation in this vicinity.

In the columns figure 1 denotes highest excellence:

	Quality.	Quantity.	Growth.	Total.
Delaware.....	2	3	4	9
Concord.....	5	2	3	10
Ives' Seedling.....	6	5	1	12
Iona.....	1	6	7	14
Diana.....	3	4	5	12
Hartford.....	7	1	2	10
Israella.....	4	7	6	17

Troppe, Md.,

M. H. K.

The Florist.

FLORICULTURE---FOR DECEMBER.

PREPARED BY JOHN FEAST, FLORIST, BALTIMORE.

December, the first of the winter months, sets mild. The month past was unusually favorable for outdoor operations, and the cultivator who has not improved it, in preparing for spring crops, has lost much valuable time, as much can be done by getting the ground ready to receive the crops, by turning up the ground and top dressing with manure. The most to be done, is to prepare frames or hot-beds for the winter season for lettuce, cauliflower and such vegetables as are usually raised in frames.—Protect all root crops that are taken up, in the cellar, or ridging out of doors, covered with long straw—then cover over a foot thick, or more, with soil, to resist the frost, and when wanted, open one end of the ridge and proceed onward, but be careful to cover the aperture so as to resist the frost.—Roots kept in this way, generally do better than when kept in large heaps, which leads to decomposition.

The *Greenhouse* will occupy much time in keeping in order, by paying strict attention to having everything well arranged and kept clean. Plants will not thrive if attention is not paid to them. If aphides are on them, fumigating with tobacco will destroy them. Give them a syringing with pure water afterwards. This requires to be done frequently. Sometimes the red spider and mealy bug infest them, to eradicate which needs only the same means, as fresh water, by syringing or turning the force of the hydrant, wash off all such pests as trouble plants. This treatment I have found better than the many mixtures in use, which, if not in proper hands and used with judgment, are liable to destroy many plants.

Camelias will now begin to bloom; keep them cool and be careful not to give them too much water until they begin to grow.

Azaleas, like the above, require to be kept moderately cool; next month, some will be flowering, and will require more moisture, for if allowed to droop the flowers, it spoils the bloom, and they seldom look so well afterwards.

Geraniums, cut down, keep dry until they show signs of growth. Keep them near to glass and give plenty of air on fine days. Re-pot in proper size pots, if needed, when they have made some growth.

Hard Wooded Plants will need going over—prune and tie up neatly, to give them a fine appearance. Give plenty of room at all times, if fine specimens are desired,

Greenhouse Bulbs, as *Ixias*, *Sparaxis*, *Oxalis*, *Hamanthus*, *Tritelias*, &c., will be growing and flowering. Place them near the light, give plenty of water, and if properly treated, will pay for the attention given them, as no one thing is more beautiful when in bloom.

Violets, *Auriculus* and *Double Primroses*, if in frames, will need to be kept a little protected—they like plenty of air in fine weather and should be kept at a regular temperature.

Carnations and *Pinks* need the same treatment, but less moisture, as they are apt to damp off if kept too wet.

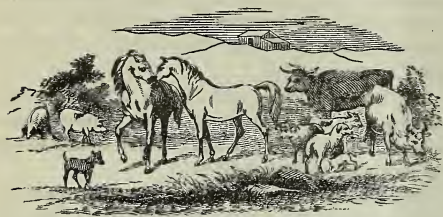
Hothouse, or more tender plants, require a higher temperature, such as *Begonias*, *Peperomas*, *Plumbagos*, *Alocasias*, *Colocasias*, *Dracenas*, *Marantas*, and such like, many of which will now be in flower and require more water when more heat is given; but one thing is to be guarded against, never raise the artificial heat above the natural, if it can be avoided, as plants need repose as well persons. It is a practice too common in the present day, keeping plants continually excited.

Work in the garden will soon close, such as planting trees, shrubs and bulbs, which require a good top-dressing of manure. The pruning, in general, can be done any time before the Spring; this forwards the work greatly in the Spring, by having everything ready for operation. The making of walks, laying down grass and removing such things as are more or less carried out to complete any alterations that may be proposed by way of improvement, by introducing new trees or plants, which we think will aid in beautifying the grounds.

MUCK ON SANDY SOILS.—The *Germantown Telegraph* says: In some portions of the southern States, where they are slow in adopting new methods of culture or hints leading to experiments, they are beginning to find out that muck hauled upon sandy soils tends to increase their productiveness. This is no new thing. We recommended it, as did correspondents, five-and-twenty years ago and pointed out instances that had been attended with marked success. Even pure clay hauled upon light sandy soils, and intermingled, has been followed by excellent results, the land increasing its crops fully fifty per cent. Where clay or muck is as convenient for transportation as manure, there is no question but its application as here suggested would prove of the most decided advantage. Even in gardens, when the soil has become exhausted by long-continued cultivation, a dressing of clay is far better than a coat of the best manure.

ASTERS AND PLANT LICE.—A strong solution of tobacco water with a little whale oil soap added, sprinkled over the plants with a watering pot is a remedy used by gardeners.

Live Stock Register.



Weaning Time.

The most critical period in the life of a colt or calf, is when it is ceases all dependence upon its dam for food. Usually occurring in the fall, when the pastures are failing, when the storms increase in frequency and rigor, the young one will demand, and should always receive, the most careful attention of the owner. Abundant, suitable food, and perfect shelter from rain and snow should be always accessible. Any lack in these essentials, is sure to manifest itself in serious unthriftiness, if not in positive, active disease. Mr. WILLARD in one of his lectures has said :

"It requires one-fourth more food to winter a cow if she come to the barn in a poor condition. At no other season of the year is so much care needed as in late autumn and so little care exercised. Frosts affect the grass to such a degree that it is not a good plan to keep cows in the pasture without additional food after the first hard frosts. Barns should be warm as well as ventilated, and by so constructing them as to secure these two conditions, a large amount of food will be economized."

This advice applies with tenfold force to the young. The impression made by a want of proper care until the shock of weaning is fairly recovered from, is fatal to all promise of a perfect, well developed animal at maturity.—*National Live Stock Journal.*

STEAMING FOOD FOR CATTLE.—The *Practical Farmer*, in commenting upon this subject, says:—

"In steaming food for cattle, it is not proper to use galvanized iron pipe, iron the fact that the zinc coating is liable to shell off speedily after being once broken, and entering the food would be pernicious in its effect. This zinc coating, says the *Arts*, almost always contains some free acid, and will be so introduced into the system of the animal, which is by no means desirable."

Fowls intended for the market should be well fattened. It don't pay to bring lean chickens to market. Give plenty of corn meal, boiled potatoes, and pure water.

DISTEMPER IN DOGS.

A subscriber at Georgetown, D. C., asks to publish through the columns of the "FARMER" cure for the distemper in dogs, he having recently lost a very valuable Newfoundland pup from this disease. Frank Forester, some years since, published the following on the subject, which we submit :

"Distemper is caused by low diet, dirt, confinement in close, unhealthy, damp kennels, too great a quantity of raw, or even boiled flesh, too little exercise, sudden changes in the atmosphere, contagion. Symptoms of the disease are as follows: Loss of spirit, activity, and appetite, drowsiness, dulness of the eyes, lying at length with nose to the ground, coldness of extremities, lachrymation, ears, and lips, heat in head and body, running of the nose and eyes, accompanied by sneezing, emaciation, and weakness, dragging of hinder quarters, flanks drawn in, diarrhœd, sometimes vomiting. There are several receipts for this, the worst and most fatal of all diseases. One is better than another, according to the various stages. The first, if commenced at an early stage, seldom fails. Half an ounce of salts in warm water, when the dog is first taken ill; thirty-six hours afterwards ten grains compound Powder of Ipecacuanha in warm water. If in two days he is no better, ten sixteen grains Antimonial Powder, made into four boluses; one night and morning for two days. If no improvement visible, continue these pills, but less diarrhœa comes on, in which case you may use the ipecacuanha day about with the pills. If the animal is much weakened by this, give him a teaspoonful Huxam's Tincture of Bark three times a day. Keep warm, and fat on rich broth. James's Powder is also almost a certain remedy. Divide into four grains; or Antimonial Powder and Calomel three parts of first to one of latter, from eight to fifteen grains, or, after the salts, Ant. Powder, three or four grains, Nitrate Potash, five, ten, or fifteen grains; Ipecacuanha, two, three, or four. Make into a ball, and give twice or three times a day, according to appearances. Repeat the purge with emetics every fourth day, but avoid too great looseness of bowels. Diarrhœa sometimes supervenes in which case give Compound Powder of Chamberlain with Opium, ten grains. In case of fits coming on, destroy the animal. The same may be said of paralysis. If this disease is taken in its early stage and attended to, and the dog kept warm, there is not much danger. Otherwise it is very fatal."

Quick returns for capital and labor invested, hardly to be expected by the farmer. He must, more than most men, learn to wait. But if at this season he has a full barn, granary, corn crib and cellar with healthy flocks and herds, he cannot say that these returns are not sure.

Oxen.—A good ox should have a long, lean face, bright hazel eye, which shows capability to receive instruction and disposition to obey it. Large nostrils denote the capability of the ox to work on a hot day. Very large horns at the base denote laziness. Full breast, straight back, wide ribs—by which is meant ribs that round out nearly as wide as hip bones—and wide gambrel, denote length. Straight knees, broad toes, pointing straight forward, show an ox can travel on hard road or pavement. They should be well matched, especially in disposition and speed.

The farmer who has a pair of oxen answering this description has a very good team. The next thing is a good teamster. The better the ox, the easier he is spoiled by a man who knows how to drive. The teamster should have judgment in loading. Some teamsters know no better than to think an ox can draw anything until they weary him. An ox should not be over-worked to begin with. He should never know how much he can draw, but always have such confidence in his driver as to think he can draw anything he may ask him to.

Remedy for Hog Cholera.

Dr. J. B. S., of Newmarket, Va., writes the *Country Gentleman* as follows: Some time since I concluded to write to you concerning hog cholera. I think I have discovered a specific for that disease. Believing it to be a blood disease, (from my observation of it, which has been considerable,) and very similar to diphtheria in the human species, I have treated it very successfully in a similar manner to my treatment of diphtheria in mankind.

Chlorate of Potash is the great remedy. It contains a great deal of oxygen, and at once improves the impoverished condition of the blood. I give it with turpentine rendered soluble by rubbing up with gum arabic, and then adding water, and giving it to the hogs with bran. None of the above medicines are poisonous, therefore can be given without being very particular as to quantity; hence have not given my formula. Where the mucous membranes have been involved in any disease, turpentine has been used advantageously, but the great remedy in hog cholera, on which I rely with implicit confidence, is *chlorate of potash*. I cured a lot of about one hundred hogs of my own raising by the use of this remedy, and prevented the disease from spreading on my farm.

PREVENTIVE OF GAPES.—T. S. Gold said at a recent agricultural meeting, that he had a word to say in favor of salt as a cure and preventive of gapes in chickens. Had tried it successfully, and knew its value. A tablespoonful of salt with two quarts of Indian meal, was about the right proportion."

USEFUL RECIPES.

CURE FOR HOOF ROT.—A veteran stock raiser gives in the *Rome (N. Y.) Sentinel*, the following as a certain cure for hoof rot in cattle, horses or sheep: "One teacupful of sharp cider vinegar, one and a half tablespoonfuls of copperas; one and a-half tablespoonfuls of salt. Dissolve gradually on the hot stove, but do not let it boil. When cool, apply it on the affected limb and hoof, and also swab out the mouth of the animal with the mixture. Two or three applications usually effects a cure. The remedy has been used with perfect success since 1818.

REMEDY FOR BLOODY MILK IN COWS.—A subscriber of the *Rural New Yorker* has found this to be good: Give one tablespoonful of sulphur in a little bran once a day. If a very bad case, give it twice a day, in dry bran, of course.

TO CURE WARTS ON HORSES.—I had a fine colt that had about twenty large warts on his breast, under his belly and in his ears. I was recommended to burn them out with caustic or a hot iron, which I tried, and found that both were slow and barbarous. One day I picked up a small piece of newspaper, and found the following recipe: To cure warts on horses: Equal parts of spirits of turpentine and olive oil. Rub well every two or three days. This I tried, and it acted like a charm.—*Cor. Rural New Yorker*.

WARTS ON A HORSE'S NOSE.—I can tell what cured warts on a colt last summer. I used salt butter—smeared the warts with it. A few applications completely removed every wart and left the colt's nose as smooth as ever. His nose and under lip were literally covered.—JOHN A. CORNCROSS, in *Rural New Yorker*.

SWEENEY.—As to that much talked-of disease in horses, sweeney, Prof. Law, of Cornell University, writes that in many supposed cases the shrinkage of the muscles of the shoulders is the result of disease in the feet. If it be decided that the disease is really sweeney, he advises applying a mild blister repeatedly over the shoulder muscles, and giving plenty of walking exercise on a smooth road. Equal parts of the oil of turpentine, ammonia and olive oil may be rubbed into the shoulder repeatedly.

SPRUNG KNEES.—Corns are the cause, in most cases, of sprung knees. The horse, in order to relieve the heels from pressure, throws his weight mainly on the toe, thus relaxing the tendons and suspensory ligament of the leg, contraction of which naturally follows. As a proof of this, examine for yourselves the feet of sprung-kneed horses, and you will find a majority, if not four-fifths of them, with corns.

LINIMENT FOR ANIMALS.—An excellent liniment for wounds, bruises, sprains, and swellings may be made as follows: A pint of good vinegar, a pint of soft soap, a handful of salt, and a tablespoonful of saltpetre. Mix thoroughly and bottle for use. This is very efficacious, and is cheaply and easily prepared.

RED WATER IN SHEEP.—Take Epsom salts, one ounce; ginger, one scruple; gentian, one drachm; warm water, two ounces; linseed oil, one ounce. The above may be given, either alone or with gruel, to a full-grown sheep, and from one-fourth to one-half to lamb, according to its age.

SAFE AND SURE REMEDY FOR LICE ON CATTLE.—To one gallon of soft water add one pint of soft soap, and boil them together; then add one ounce of arsenic, and stir till well mixed; after this add another gallon of soft, cold water, and it is fit for use. The soap neutralizes the poison and renders it harmless to the cattle, but a dead-shot to lice and their eggs.—*American Stock Journal*.

Ladies Department.

THE SWEETS OF MARRIED LIFE.

IN WHAT THEY CONSIST AND HOW TO PRESERVE THEM.

Marriage, which most girls consider the sole aim of their existence and the end of all their anxieties, is often the beginning of a set of troubles which none among them expect, and which, when they come, very few accept with the dignity of patience or the reasonableness of common sense.—Hitherto the man has been the suitor, the wooer; it has been his *metier* to make love, to utter extravagant professions, to talk poetry and romance of an eminently unwearable kind, and to swear that feelings which, by the very nature of things, it is impossible to maintain at their present state of fever heat, will be as lasting as life itself, and never know subsidence or diminution. And girls believe all that their lovers tell them. They believe in the absorption of the man's whole life in love, which at the most cannot be more than a part of his life; they believe that things will go on forever as they have begun, and that the fire and fervor of passion will never cool down to the more manageable warmth of friendship. And in this belief of theirs, lies the rock on which not a few make such pitiful shipwreck of their married happiness. They expect their husbands to remain always lovers. Not lovers only in the best sense, which of course all happy husbands are to the end of time, but lovers as in the old fond foolish, courting days. They expect a continuance of the romance, the poetry, the exaggeration, the *petits soins*, the microscopic attentions, the absorption of thought and interest, the centralization of his happiness in her society, just as in the days when she was still to be won, or a little later, when being won, she was new in the wearing. And as we said before, a wife's first trial, and her greatest, is when her husband begins to leave off this kind of fervid love-making, and settles down into the tranquil friend instead.

Love Must be Frequently Expressed.

It is in the nature of most women to require continual assurances, just as it is with children; and a very few believe in a love which is not frequently expressed; while the ability to trust in the vital warmth of an affection that has lost its early feverishness is the mark of a higher wisdom than most of them possess. To make them thoroughly happy a man must be always at their feet; and they are jealous of everything—even of his work—that takes him away from them, or gives him occasion for thought and interest outside themselves. They are rarely able to rise to the height of married friendship; and if they belong to a reticent and quiet-going man—a man who says "I love you" once for all, and then contents himself with living a life of loyalty and kindness, and not talking about it—they fret at what they call his coldness, and feel themselves shorn of half their glory and more than half their dues. They refuse to believe in that which is not daily repeated; they want the incense of flattery, the excitement of love-making, and if these desires are not ministered to by their husbands, the danger is that they will get some one else to "understand" them, and feed the sentimentality which dies of inanition in the quiet serenity of home. Moonlights, and a bouquet of the earliest flowers carefully arranged and tenderly presented, and the changing lights on the mountain tops, and the exquisite song of the nightingale—at two o'clock in the morning—and all the rest of those vague and suggestive delights which once made the

meeting-places of souls, and furnished occasion for delicious ravings, become by time and use, and the wearing reality of business and the crowding pressure of anxieties, puerile and annoying to the ordinary Englishman, who is not a poet by nature. "When all the world was young," by reason of his own youth, and the fever of the love making time was on him, he was quite as romantic as his wife. But now he is sobering down; life is fast becoming a prosaic thing to him; work is taking the place of pleasure, ambition of romance; he poohpoohs her fond remembrances of bygone follies, and prefers his pipe in the warm library to a station in the open window, watching the sunset because it looks like it did on that evening, and shivering with incipient catarrh. All this is very dreadful to her; women unfortunately feel themselves, remaining young and keeping hold much longer than men do.

A Good Cry.

The first defection of this kind is a pang the young will never forgets; but she has many more, and yet more bitter ones, when the defection takes a personal shape, and some pretty little attention is carelessly received without its due reward of loving thanks. Perhaps some usual form of address is omitted in the hurry of the morning's work, or some gloomy anticipation of professional trouble makes him oblivious of her presence, or, fretted by her importunate attentions, he buries himself in a book, more to escape being spoken to than for the book's own merits. Many a woman has gone into her own room and had a 'good cry' because her husband called her by her baptismal name, and not by some absurd nickname invented in the days of their folly; or because, pressed for time, he hurried out of the house without going through the established formula of leave taking. The lover has merged into the husband; security has taken the place of wooing; and the woman does not take kindly to the transformation. Sometimes she plays a dangerous game and tries what flirting with other men will do. If her scheme does not answer, and her husband is not made jealous, she is revolted, and holds herself that hardly used being, a neglected wife. She cannot accept as a compliment the quiet trust which certain cool-headed men of a loyal kind place in their wives; and this tolerance of her flirting manner—which he takes to be manner only, with no evil in it, and with which, though he may not especially like it, he does not interfere—seems to her indifference rather than tolerance. Yet the confidence implied in this forbearance is in the point of fact worth all the *petits soins* ever invented, though this hearty faith is just the thing which annoys her, and which she stigmatizes as neglect. If she were to go far enough she would find out her mistake. But by that time she would have gone too far to profit by her experience.

Nothing is more annoying than that display of affection which some husbands and wives show to each in society. That familiarity of touch, those half-concealed caresses, those absurd names, that prodigality of endearing epithets, that devoted attention which they flaunt in the face of the public as a kind of challenge to the world at large to come and admire their happiness, is always noticed and laughed at; and sometimes more than laughed at. Yet to some women this parade of love is the very essence of married happiness and part of their dearest privileges. They believe themselves admired and envied, when they are ridiculed and scoffed at; and they think their husbands are models for other men to copy, when they are taken as samples for all to avoid. Men who have any real manliness, however, do not give into this kind of thing; though there are some, as effeminate and gushing as women themselves, who like this effusiveness of love, and carry it on to old age, fondling the ancient grandmother with grey hair as lavishly as they

and fondled the youthful bride, and seeing no want of harmony in calling a withered old dame of sixty and upwards the pet names by which they had called her when she was the girl of a girl of eighteen. The continuance of love from youth to old age is very lovely, very cheering; but even John Anderson my Jo," would lose its pathos if Mrs. Anderson had ignored the difference the raven locks and the gray brow. This public display of familiar affection is never seen among men who pride themselves on making good lovers; as certain men do—those who have reduced the practice of love-making to an art, a science, and know their reason to a letter. These men are delightful to women, who care nothing so much as being made love to, as well after marriage as before; but men who take matters quietly, and rely on the good sense of their wives to take matters quietly so, sail round these scientific adorers for both depth and anliness. And if women knew their best interests they could care more for the trust than the science.

Women are Fond of Petting.

All that excess of flattering and petting of which women are so fond becomes a bore to a man if required as part of the daily habit of life. Out in the world as he is, harassed by anxieties of which she knows nothing, home is emphatically his place of rest, where his wife is his friend who knows his mind, where he may be himself without the fear of offending, and relax the strain that must be kept up out of door; here he may feel himself safe, understood, and at ease. And some women, and these by no means the coldest or the least loving, are wise enough to understand this need of rest in the man's harder life, and, accepting the quiet of security as part of the conditions of marriage, content themselves with the undemonstrative love into which the fever of passion has subsided. Others fret over it, and make themselves and their husbands wretched because they cannot believe in that which is not forever paraded before their eyes. Yet what kind of home is it for the man if he has to walk as if on egg-shells, every moment afraid of wounding the susceptibilities of a woman who will take nothing on trust, and who has to be continually assured that he still loves her, before he will believe that to-day is as yesterday? Of one thing he may be certain no wife who understands what is the best kind of marriage demands these continued attentions, which voluntary offerings of the lover become enforced tribute from the husband. She knows that as a wife, whom it is not necessary to court or flatter, she has a nobler place than that which is expressed by the attentions paid to a mistress. Wifehood, like all assured conditions, does not need to be buttressed up; but a less certain position must be supported from the outside, and an insecure self respect, an uncertain hold, must be perpetually strengthened and reassured. Women who cannot live happily without being made love to, are more like mistresses than wives, and come but badly off in the great struggles of life and the cruel handling of time. Placing all their happiness in things which cannot continue, they let slip that which lies in their hands, and in their desire to retain the romantic position of lovers lose the sweet security of wives. Perhaps, if they had higher aims in life than those with which they make shift to satisfy themselves, they would not let themselves sink to the level of this folly, and would understand better than they do now the worth of realities as contrasted with appearances.

And yet we cannot but pity the poor, weak, craving souls who long so pitifully for the freshness of the morning to continue far into the day and evening, who cling so tenaciously to the fleeting romance of youth. They are taken by the glitter of things—love-making among the rest; and the man who is showiest in his affection, who can express it with the most color, and paint it, so to speak, with the minutest

touches, is the man whose love seems to them the most trustworthy and the most intense. They often make the mistake of confounding this show with the substance, of trusting to pictorial expression rather than to solid facts. And they often make the mistake of cloying their husbands with personal half-childish caresses, which were all very well in the early days, but which become tiresome as time goes on and the gravity of life deepens. And then, when the man either quietly keeps them off or more brusquely repels them, they are hurt and miserable, and think the whole happiness of their lives is dead, and all that makes marriage beautiful at an end. What is to be done to balance things evenly in this unequal world of sex? What, indeed, is to be done at any time to reconcile strength with weakness, and to give each its due? One thing at least is sure. The more thoroughly women learn the true nature of men, the fewer mistakes they will make, and the less unhappiness they will create for themselves; and the more patient men are with the hysterical excitability, the restless craving, which nature, for some purpose at present unknown, has made the special temperament of women, the fewer *femmes incomprises* there will be in married homes, and the larger the chance of married happiness. All one's theory of domestic life come down at last to the give and take system, to bearing and forbearing, and meeting half way indiosyncrasies, which one does not personally share.—*London Saturday Review.*

DOMESTIC RECIPES.

MINCE PIES.—The following recipe for mince pies, which are now in season, is confidently recommended after using it for many years:

Boil a fresh beef tongue tender, let it get cold, then chop it fine with one pound of suet, one half peck of apples, two pound of currants, picked and washed very carefully; one pound citron sliced, half an ounce each of powdered cloves, allspice, cinnamon and ginger; three pints of sweet cider, one pint of Madeira wine, half a pint of brandy, with enough sugar to sweeten to your taste. This will make a large jar full.—*Germantown Telegraph.*

TO ROAST A TURKEY.—It should first be "killed"—at least two days in advance. Make a force meat of grated bread crumbs, pepper, salt, sweet marjoram, minced suet, and beaten yolk of egg. Chop the liver, gizzard and heart for the gravy. Stuff the craw and the body, and sew up the openings. Dredge with flour, and put the bird into the bake pan, with the bottom well covered with water. Baste every half hour with butter.

CRANBERRY SAUCE.—To stew cranberries, a quart of berries, a pint of brown sugar, and a pint of water; place all in a porcelain kettle, cover closely, and allow them to cook eight minutes after coming to a boil, without stirring; remove from the fire, and empty into an earthen dish to cool.

MINCE PIE.—Boil the head and heart of beef until done; chop fine; to one quart of meat add two quarts of apple, or twice as much apple as meat; other ingredients, mace, cinnamon, a few cloves, raisins, currants, citron if you like; a little salt, some boiled cider and a mixture of sugar and molasses for sweetening; a little lemon gives added flavor. Put all the ingredients over the fire and let simmer an hour. After cool, put in the pans and bake with moderation.

PUMPKIN PIE.—Stew the pumpkin, strain it—a fine grained pumpkin, remember—use cream instead of milk, and very little of eggs; mace or cinnamon for spice, or both, or none; roll the pastry very thin. A crust can be dispensed with, by sifting a thin layer of corn meal over the oiled pie dish; it forms sufficient firmness to hold the "filling" in shape when served.—*Rural New Yorker.*

A BODY AND MIND DISEASE.

Such is dyspepsia. The stomach and the brain are too intimately allied for the one to suffer without the other, so that dyspepsia and despondency are inseparable. It may be added, too, that irritation of the stomach is almost invariably accompanied by irritation of the temper.

The invigorating and tranquillizing operation of *HOSSTETTER'S BITTERS* is most powerfully developed in cases of indigestion. The first effect of this agreeable tonic is comforting and encouraging. A mild glow pervades the system, the chronic uneasiness in the region of the stomach is lessened, and the nervous restlessness which characterizes the disease is abated. This improvement is not transient. It is not succeeded by the return of the old symptoms with superadded force, as is always the case when unmedicated stimulants are given for the complaint. Each dose seems to impart a permanent accession of healthful invigoration. But this is not all. The aperient and antibilious properties of the preparation are scarcely secondary in importance to its tonic virtues. If there is an overflow of bile the secretion is soon brought within proper limits, and if the biliary organ is inert and torpid it is toned and regulated. The effect upon the discharging organs is equally salutary, and in cases of constipation the cathartic action is just sufficient to produce the desired result gradually and without pain. The Bitters also promote healthy evaporation from the surface which is particularly desirable at this season when sudden spells of raw, unpleasant weather are apt to check the natural perspiration and produce congestion of the liver, coughs, and colds. *The best safeguard against all diseases is bodily vigor, and this the great Vegetable Restorative essentially promotes.*

The American Stock Journal, for November, comes to us with an abundance of pleasant and instructive reading matter and a goodly supply of attractive engravings, making it an acceptable companion especially for the Farmer and Stock Breeder. We find in it most subjects pertaining to Farming and Stock, plainly discussed, and any who fail to avail themselves of its teachings deprive themselves of much valuable practical knowledge on the various subjects connected with Farming, Stock-Breeding, Dairying, Wool Growing, Poultry Keeping, &c. *The Journal* is furnished to subscribers at \$1.00 a year. Specimen copies free. Address N. P. BOYER & CO., Publishers, Parkesburg, Pa.

☞ We will send the *Maryland Farmer* and *Stock Journal* one year for \$1.50 to all new subscribers for 1871, when sent in clubs of 5 or more. Thus receiving the *Farmer* and a first class *Stock Journal* for the low price of \$1.50.

A DAILY COMPANION.—*Webster's Unabridged Dictionary* has been, in common with other great lexicons of the English language, one of my daily companions.

My testimonial to its erudition, the accuracy of its definitions, and to the vast etymological research by which it has been enriched through the labors recently bestowed upon it, can hardly be of much value, sustained as the book is in world-wide reputation, by so general an approbation; but I have no hesitation in thus expressing my sense of its merits.

JOHN L. MOTLEY,
the Historian, and now Minister at the Court of St. James.

HAWK, HAWK, SPIT, SPIT, BLOW, BLOW and disgust every body with the offensive odor from your Catarrh, just because some old foggy doctor who has not discovered and will not believe that the world moves, tells you that it cannot be cured.

The proprietor of Dr. Sage's Catarrh Remedy will pay \$500 reward for a case of Catarrh which he cannot cure. Sold by druggists, or send sixty cents to R. V. Pierce, M. D., Buffalo, N. Y., for it.

Dr. Pierce's Alt. Ext. or Golden Medical Discovery is the great Anti-Bilious Remedy of the age.

WHY DO ANIMALS NEED SALT?—Prof. James E. Johnson, of Scotland, says that half the saline matter of the blood (57 per cent.) consists of common salt, and this is partly dissolved every day through the skin and kidneys; the necessity of continued supplies of it to the healthy body is sufficiently obvious. The bile also contains soda (one of the ingredients of salt) as a special and indispensable constituent, and so do all the cartilages of the body. Stint the supply of salt, and neither will the bile be able properly to assist digestion nor the cartilages to be built up again as fast as they naturally waste. It is better to place salt where stock can have free access to it than to give it occasionally in small quantities. They will help themselves to what they need, if allowed to do so at pleasure, otherwise when they become salt-hungry, they may take more than is wholesome.

TO KEEP CIDER SWEET.—It is stated in one of our reliable agricultural exchanges, we cannot now say which, that cider in barrels can be kept sweet by taking a strip of canvas, about twelve inches long and two broad, to be dipped in melted brimstone, dried and hung in the cider-barrel from the bung-hole, in which there are only a few gallons of cider, lit and kept there until the fuse is burnt out; roll the barrel about well and then fill. This of course is done before fermentation and should it not be successful in stopping it, repeat. This can be ascertained by putting a lighted candle to the bung-hole, which, if it goes out, shows that fermentation has commenced.—*Germantown Telegraph.*

THE BEST FOOD FOR FATTENING PIGS.—*The Rural New Yorker*, says: "The best food, quality of pork and rapidity of fattening considered, we ever gave pigs, was boiled peas and potatoes. Without looking up analyses to prove or disprove the relative fattening properties of the compound with other feed, we speak of practical and profitable results."

TO GET RID OF WEEVIL, let all the wheat be cleaned out of the barn, then obtain of a neighbor a few sheaves of wheat, and place one of them in the barn, and all the weevil will gather into it, when it must be carried away and burned, and so on until all are destroyed.

THE MANCHESTER GAZETTE.—We are in receipt of a new weekly published at Manchester Carroll County, Md., by W. R. Watson, editor, at \$1.50 per annum. It is gotten up in good style and well conducted. Manchester is a thriving town, and when the Parkton and Manchester Railroad is completed will be rapidly developed.

FLY IN SHEEP.—Make a strong decoction from the leaves of tobacco, and apply with a small squirt of syringe. Repeat several times during the fall months.